

Narsee Monjee Institute of Management Studies

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :	NPAT Common 2020 QP3
Subject Name :	NPAT 2020
Creation Date :	2020-06-26 18:02:55
Duration :	106
Number of Questions :	98
Total Marks :	122
Display Marks:	Yes
Calculator :	Normal
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	Yes
Scratch Pad Required? :	Yes
Rough Sketch/Notepad Required? :	Yes
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Display Notepad Pre Exam

Group Number :	1
Group Id :	9046841462
Group Maximum Duration :	3
Group Minimum Duration :	3
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	1
Is this Group for Examiner? :	No

Display Notepad Pre Exam

Section Id :	9046841527
Section Number :	1
Section type :	Offline
Mandatory or Optional :	Mandatory
Number of Questions :	1
Number of Questions to be attempted :	1
Section Marks :	1
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	9046842300
Question Shuffling Allowed :	No

Question Number : 1 Question Id : 90468410675 Question Type : SUBJECTIVE

Correct Marks : 1

Kindly display your Notepad (Rough Sheet) for 3 minutes before the webcam. Also show both pages both sides numbered 1,2,3 and 4. Kindly showcase as it is mandatory.

Proficiency in English Language

Group Number :	2
Group Id :	9046841463
Group Maximum Duration :	0
Group Minimum Duration :	0
Show Attended Group? :	No

Edit Attended Group? :	No
Break time :	0
Group Marks :	40
Is this Group for Examiner? :	No

Proficiency in English Language

Section Id :	9046841528
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	28
Number of Questions to be attempted :	28
Section Marks :	40
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	9046842301
Question Shuffling Allowed :	Yes

Question Number : 2 Question Id : 90468410676 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

Like other cruise ships that suffered outbreaks and were often put in quarantine to protect port cities, the *Deliziosa* has found no cases of COVID-19, and so the boat's 1,831 passengers have been free to use the ship's facilities and entertainments.

Options :

- 90468437148. ✓ Like other cruise ships that suffered
- 90468437149. ✗ often put in quarantine
- 90468437150. ✗ found no cases of COVID-19
- 90468437151. ✗ free to use the ship's facilities and entertainments

Question Number : 3 Question Id : 90468410677 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

I realise that it is a great mistake to not take a break every now and then.

Options :

- 90468437152. ✗ I realise that
- 90468437153. ✗ it is a great mistake
- 90468437154. ✓ to not take a break
- 90468437155. ✗ every now and then

Question Number : 4 Question Id : 90468410678 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

The coral reef crumbles, and sand and other material pile on top, forming an island or islets.

Options :

- 90468437156. ✗ The coral reef crumbles
- 90468437157. ✗ sand and other material
- 90468437158. ✓ pile on top
- 90468437159. ✗ forming an island or islets.

Question Number : 5 Question Id : 90468410679 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

The coronavirus pandemic's economic downturn may having set off a sudden plunge in global greenhouse gas emissions, but another crucial metric for determining the severity of global warming — the amount of greenhouse gases actually in the air — just hit a record high.

Options :

- 90468437160. ✖ The coronavirus pandemic's economic downturn
- 90468437161. ✔ may having set off a sudden plunge
- 90468437162. ✖ another crucial metric for determining the severity of global warming
- 90468437163. ✖ just hit a record high.

Question Number : 6 Question Id : 90468410680 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

Thanks to hard water, I am losing hairs so rapidly, I might become bald very soon.

Options :

- 90468437164. ✖ Thanks to hard water
- 90468437165. ✔ I am losing hairs
- 90468437166. ✖ I might become
- 90468437167. ✖ bald very soon

Question Number : 7 Question Id : 90468410681 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Fill in the blanks with the appropriate word.

The warden asked them to look _____ the left to see the museum.

Options :

- 90468437168. ✖ at
- 90468437169. ✔ to
- 90468437170. ✖ from
- 90468437171. ✖ beyond

Question Number : 8 Question Id : 90468410682 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

Citizens _____ the country have now begun to express their doubts on the government's ability to tackle the economic crisis.

Options :

- 90468437172. ✖ around
- 90468437173. ✖ within
- 90468437174. ✖ in
- 90468437175. ✔ across

Question Number : 9 Question Id : 90468410683 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

I will call you when the teacher _____ to the class.

Options :

- 90468437176. ✖ will come
- 90468437177. ✔ comes
- 90468437178. ✖ come
- 90468437179. ✖ had came

Question Number : 10 Question Id : 90468410684 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

They _____ the TV for more than five hours now.

Options :

90468437180. ✘ have watched
90468437181. ✘ watched
90468437182. ✘ are watching
90468437183. ✔ have been watching

Question Number : 11 Question Id : 90468410685 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

_____ the poorest countries should strive to help their children's ability to live healthy lives, the excessive carbon emissions threaten their children's future.

Options :

90468437184. ✔ While
90468437185. ✘ Since
90468437186. ✘ Whereas
90468437187. ✘ As

Question Number : 12 Question Id : 90468410686 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

As _____ of the surgery that he underwent last month, the bowler was not fit to be included in the team that would tour New Zealand.

Options :

90468437188. ✘ an affect
90468437189. ✘ an alibi
90468437190. ✔ a consequence
90468437191. ✘ a compliance

Question Number : 13 Question Id : 90468410687 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

_____ of the books I need for my research are not available in the library.

Options :

90468437192. ✘ Much
90468437193. ✔ Many
90468437194. ✘ Little
90468437195. ✘ Any

Question Number : 14 Question Id : 90468410688 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best fills in the blank and completes the sentence given below.

Some countries are bilingual and have two official languages, but _____ of them is English.

Options :

90468437196. ✘ nor
90468437197. ✘ either
90468437198. ✔ none
90468437199. ✘ both

Question Number : 15 Question Id : 90468410689 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best gives the meaning of the word/phrase in bold.

Most succulents are easy to care for and are the best plants for gardeners who are **beginners**.

Options :

90468437200. ✘ naïve
90468437201. ✘ ignorant
90468437202. ✘ initiators
90468437203. ✔ novices

Question Number : 16 Question Id : 90468410690 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best gives the meaning of the word/phrase in bold.

Western science is starting to provide some **concrete** clues as to how yoga works to improve health.

Options :

- 90468437204. ✖ structural
- 90468437205. ✖ vivid
- 90468437206. ✔ tangible
- 90468437207. ✖ natural

Question Number : 17 Question Id : 90468410691 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best gives the meaning of the word/phrase in bold.

I wonder how Rajiv manages to **subsist** on such a small allowance.

Options :

- 90468437208. ✔ cope
- 90468437209. ✖ remain
- 90468437210. ✖ suffer
- 90468437211. ✖ relish

Question Number : 18 Question Id : 90468410692 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best gives the meaning of the word/phrase in bold.

There have been many **proposed** alternatives to the conventional petrol- or diesel-powered cars.

Options :

- 90468437212. ✖ prepared
- 90468437213. ✔ projected
- 90468437214. ✖ sponsored
- 90468437215. ✖ sophisticated

Question Number : 19 Question Id : 90468410693 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best completes the given sentence.

A research has _____ the proposition that tiny babies are capable of very fine auditory discrimination.

Options :

- 90468437216. ✖ provoked
- 90468437217. ✖ displayed
- 90468437218. ✖ defined
- 90468437219. ✔ substantiated

Question Number : 20 Question Id : 90468410694 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best completes the given sentence.

Quiet, reflective time is just as important for children as any _____ activity.

Options :

- 90468437220. ✔ purposeful
- 90468437221. ✖ focused
- 90468437222. ✖ attentive
- 90468437223. ✖ determined

Question Number : 21 Question Id : 90468410695 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best completes the given sentence.

Despite layers of _____, each currently beyond the reach of modern computers, young children readily solve the linguistic puzzles facing them, even surpassing their input when it lacks the expected structure.

Options :

- 90468437224. ✖ connectivity
- 90468437225. ✔ complexity
- 90468437226. ✖ compositionality
- 90468437227. ✖ congeniality

Question Number : 22 Question Id : 90468410696 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the option that best completes the given sentence.

Speaking two languages, rather than just one, has _____ practical benefits in a globalised world.

Options :

90468437228. ✓ tangible

90468437229. ✗ clean

90468437230. ✗ transparent

90468437231. ✗ inevitable

Question Number : 23 Question Id : 90468410697 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below are five sentences, labelled A, B, C, D and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to form a meaningful paragraph.

- A. There are double handrails for people of various heights and museum-worthy manhole covers.
- B. That characterisation isn't unique to Japan – after all, Switzerland's detailed timepieces are legendary.
- C. Japan is often described as a nation that loves details.
- D. In fact, there's a name for the sort of traditional artists who do this: shokunin.
- E. But Japan has a long history of taking the time to perfect things in minute detail.

Options :

90468437232. ✓ C, A, B, E, D

90468437233. ✗ C, D, E, A, B

90468437234. ✗ C, E, A, D, B

90468437235. ✗ C, B, D, E, A

Question Number : 24 Question Id : 90468410698 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below are five sentences, labelled A, B, C, D and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to form a meaningful paragraph.

- A. In addition to access to capital and talent to innovate, other ways to incentivize innovation include an efficient regulatory system.
- B. Often developed through knowledge hubs and incubators, these joint ventures are a place where entrepreneurs' ideas come to fruition.
- C. Such a regulatory system would be predictable, transparent, scientifically rigorous, and has respect for intellectual property.
- D. The aim of any such collaborative innovation is to partner across sectors and find solutions that are long-term and sustainable.
- E. Creating new collaborations and partnerships, where innovation can thrive is an important part of today's research and development landscape.

Options :

90468437236. ✗ E, A, D, B, C

90468437237. ✗ E, D, C, B, A

90468437238. ✗ E, C, A, B, D

90468437239. ✓ E, B, D, A, C

Question Number : 25 Question Id : 90468410699 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below are five sentences, labelled A, B, C, D and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to form a meaningful paragraph.

- A. One of the most delightfully apt new phrases of the last few years is a Chinese term meaning "bowed head tribe".
- B. These are the people whose heads are lowered and who are constantly gazing at their phones.
- C. It's a wittier, more vivid description than "smartphone addict" and feels a lot closer to our lived experience.
- D. New words sometimes skewer a trend so perfectly you wonder how you survived without them.
- E. It describes the people we see every day on city streets – or don't, because we're a member of the tribe ourselves.

Options :

90468437240. ✗ A, B, C, E, D

90468437241. ✗ D, C, A, B, E

90468437242. ✓ D, A, E, B, C

90468437243. ✗ A, B, E, D, C

Question Number : 26 Question Id : 90468410700 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below are five sentences, labelled A, B, C, D and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to form a meaningful paragraph.

- A. The more leisure they have the less hope there is for them, as far as cure is concerned.
- B. Telephone maniacs are usually men of leisure who have small appreciation of the value of time.
- C. Regardless of the hour or the pressure of business, they insist on telling long stories over the wire.
- D. The worst feature about the disease is that those who have it never realise that they are making themselves obnoxious.
- E. An unmistakable symptom of the disease is a desire to talk to people at distant points about all sorts of things at all hours.

Options :

90468437244. ✗ B, C, D, A, E

90468437245. ✓ B, A, E, D, C

90468437246. ✖ C, E, D, A, B

90468437247. ✖ D, E, C, A, B

Sub-Section Number : 2
Sub-Section Id : 9046842302
Question Shuffling Allowed : Yes

Question Id : 90468410701 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (27 to 31)

Read the passage below and answer the questions that follow.

Probably most of the world is bilingual, or more than bilingual. It is common in many countries to speak a national language alongside an international lingua franca such as Arabic, Spanish or English. On top of that, there may be a mother tongue that is not the same as a national language. There is something quite uncanny about the ability to move rapidly between languages which even practitioners find hard to describe. Anyone who has learnt a language recognises that moment when you pass from translating in your head to just speaking it, the words emerging from inchoate thoughts before you can quite formulate them.

There is some evidence that babies still in the womb can be aware of the difference between languages, and this is certainly the case very soon after birth. Scientists are witnessed solemnly exposing infants to rudimentary languages with artificial rules — that the syllables Tu Pi Ro must always follow each other in that order. When an established rule is broken for the first time in the artificial language (but not in other languages around) the baby shows surprise and increased attention.

There have been repeated claims that people who can speak more than one language are more intelligent. It does seem as if bilingual ability affects some aspects of the performance of tasks, but often not in any significant way. Sometimes it appears to have an impact in a negative manner — the active vocabulary of bilinguals can be smaller than that of monolingual speakers. In other cases, such as the resolution of conflicting information, bilingual speakers tend to do better. This is unproven, though of course it is always useful to be able to speak another language.

It may be that different categories of bilingualism lead to different conclusions here. It seems quite plausible that someone who has spoken more than one language from birth would not be stretching his or her brain in the same way as another who painfully has set about mastering the grammar of a foreign language in youth or adulthood. Speakers of acquired languages display such different levels of confidence and mastery that it's unlikely to have solid or consistent effects on intelligence or cognitive development. In German I can hold a conversation, read a novel, write a letter — and once or twice I have even dreamt in it; in Arabic I could just about buy a train ticket or ask for directions. It doesn't seem likely that they have the same contribution to mental capacity. It would also be worth investigating whether a person who had kept mentally active by acquiring a language in middle age would find that it warded off mental decay more successfully than a bilingual speaker from birth.

The world may be growing more, not less, multilingual as transport links improve and increasing numbers are exposed to others unlike themselves. English speakers are shielded from this truth because, uniquely, our need to acquire foreign languages is decreasing. Forty years ago, one had to learn a few words of Portuguese to travel round Portugal or Brazil, but nowadays their inhabitants are much less likely to be monoglot.

Sub questions

Question Number : 27 Question Id : 90468410702 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The first paragraph tells us that:

Options :

90468437248. ✔ those who speak more than one language can shift rapidly between them

90468437249. ✖ most people mentally translate a language before uttering it

90468437250. ✖ the majority of people in the world speak more than one language

90468437251. ✖ Arabic, Spanish and English are the most commonly spoken languages globally

Question Number : 28 Question Id : 90468410703 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The author claims that none of the following can be proven about bilingualism, EXCEPT:

Options :

90468437252. ✖ that it contributes to intelligence and cognitive development

90468437253. ✖ acquiring a language late in life is better than learning it at birth

90468437254. ✔ speaking more than one language is beneficial to the speaker

90468437255. ✖ being bilingual from birth keeps a person more mentally agile than learning a language later

Question Number : 29 Question Id : 90468410704 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The writer mentions his/her linguistic abilities in German and Arabic to illustrate the difficulty in drawing a connection between language acquisition and intelligence:

Options :

90468437256. ✖ as different languages can have different applications

90468437257. ✖ especially when there are different linguistic scripts involved

90468437258. ✖ as people have different reasons for learning a language

90468437259. ✔ given a varying difference in the ability to speak different languages

Question Number : 30 Question Id : 90468410705 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The word 'monoglot' refers to a person who is:

Options :

90468437260. ✖ Monotheistic

90468437261. ✓ Monolingual

90468437262. ✗ Monocultural

90468437263. ✗ Monastic

Question Number : 31 Question Id : 90468410706 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

We can infer from the last paragraph that:

Options :

90468437264. ✓ more people today can converse in English

90468437265. ✗ with travel more people are familiar with a foreign language

90468437266. ✗ better communications have spawned an interest in languages

90468437267. ✗ knowing Portuguese is not sufficient to travel around Brazil

Sub-Section Number :

3

Sub-Section Id :

9046842303

Question Shuffling Allowed :

Yes

Question Id : 90468410707 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (32 to 36)

Read the passage below and answer the questions that follow.

Popular reporting about disasters in poorer and developing countries usually begins with the spectacle, and focuses on post-event relief and reconstruction operations. These accounts follow a straightforward narrative: they acknowledge the absence or failure of early warning systems, and explain that the affected society was vulnerable to natural hazards because of developmental failures, outdated scientific expertise and political resistance to global best practices. Having established the problem and its likely causes, media coverage shifts to describe the efforts of the 'international community' in coordinating the flow of aid, knowledge and technology into the affected region. Finally, reports quote foreign leaders and experts proclaiming that much of the damage could have been avoided by investing in social resilience and empowering civil society to counter governmental inefficiencies, neglect, corruption and arbitrariness.

These accounts – drawing a direct relationship between developmental and technological deficiencies, the state's legitimacy to govern, and its moral obligation to seek foreign assistance – highlight the insight that political legitimacy is historically a function of scientific knowledge and expertise... Victorian colonisers argued that 'savages', unable to master natural hazards, needed colonial rule for their own protection. In our time, governments play the same hand when they characterise migrants and refugees as unintelligent, disease-ridden and morally tainted swarms that threaten natural resources, dishonour national values and compromise citizen's prosperity and wellbeing. Problems of nature cannot be meaningfully distinguished from the problems of society – to claim authority over the one is to take responsibility for the other...

After the earthquake (in 2010 in Haiti) national rescue, relief and recovery operations were overwhelmed by the involvement of the US and the international community... disaster-relief operations began by treating the Haitian government as incompetent and untrustworthy... Virtually all international disaster-relief aid was spent on foreign institutions and experts... The UN, in turn, trusted its own agencies, foreign NGOs and corporations to attend to restoring public utilities and services... In April 2011, 40 Haitian social organisations chastised the IHRC for extending centuries of coercion and dependence – a call-back to colonial discourses that justified benevolent dictatorships by claiming scientific and thus moral superiority over subjugated people and their resources.

On 28 September 2018, the Indonesian island of Sulawesi suffered a 7.5 magnitude (Richter seismic scale) earthquake. ... In the aftermath, media commentary examined the crisis from two perspectives: first, it investigated the state's technical competence to handle preparedness and hazard mitigation. The answer, predictably, focused on the mismanagement and subsequent failure of the country's early warning system. Second, the commentary scrutinised the legal and political rationale underlying relief and recovery decisions: did Indonesia – as it had in the past – refuse foreign relief workers, aid and expertise in a show of sovereign authority?

Sub questions

Question Number : 32 Question Id : 90468410708 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In this passage the writer makes the argument that:

Options :

90468437268. ✗ with climate change, even developing countries need to be technologically prepared for natural disasters

90468437269. ✓ disaster relief work by international agencies often impinge on the sovereign rights of a developing country

90468437270. ✗ developing countries are ill-equipped to unilaterally handle the effects of natural calamities

90468437271. ✗ self-sufficiency and preparedness are vital especially in developing countries in reacting to natural calamities

Question Number : 33 Question Id : 90468410709 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

After a calamity in a developing country, the author believes that the media typically does all of the following, EXCEPT:

Options :

90468437272. ✗ blames the host country for their lack of scientific expertise and equipment

90468437273. ✗ lauds foreign agencies for their role in alleviating the fall-out of the disaster

90468437274. ✓ documents wasteful expenditure of funds on foreign experts and agencies

90468437275. ✗ catalogues the inefficiency and corruption of host governments in responding to the crisis

Question Number : 34 Question Id : 90468410710 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The Western view of developing societies presented in the second paragraph can be termed as:

Options :

90468437276. ✗ patriarchal

90468437277. ✓ patronising

90468437278. ✗ paternal

90468437279. ✗ partisan

Question Number : 35 Question Id : 90468410711 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The writer claims that all of the following happened in the aftermath of the earthquake in Haiti, EXCEPT:

Options :

90468437280. ✓ massive international support for the Haitian government's rescue efforts

90468437281. ✗ the diversion of aid funds to international agencies and personnel

90468437282. ✗ the side-lining of domestic agencies in reconstruction efforts

90468437283. ✗ running down the Haitian government's efforts to tackle the situation

Question Number : 36 Question Id : 90468410712 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The author mentions the 'Victorian colonisers' (paragraph 2) to draw a parallel between their attitudes and:

Options :

90468437284. ✗ today's media accounts of developing country responses to disasters

90468437285. ✗ the global views of people today about migrants and refugees

90468437286. ✗ their belief that colonial peoples will squander their natural resources

90468437287. ✓ political legitimacy is linked to scientific knowledge and expertise

Sub-Section Number :

4

Sub-Section Id :

9046842304

Question Shuffling Allowed :

Yes

Question Id : 90468410713 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (37 to 41)

Read the passage below and answer the questions that follow.

Social media, magazines and shop windows bombard people daily with things to buy, and British consumers are buying more clothes and shoes than ever before. Online shopping means it is easy for customers to buy without thinking. Major brands offer such cheap clothes that they can be treated like disposable items.

In Britain, the average person spends more than £1,000 on new clothes a year, which is around four per cent of their income. That might not sound like much, but that figure hides two far more worrying trends for society and for the environment: a lot of the consumer spending is via credit cards. British people currently owe approximately £670 per adult to credit card companies. Not only are people spending money they don't have, they're using it to buy things they don't need. Approximately 300,000 tons of clothing a year goes into landfill sites. Clothes donated to charities often don't sell and so are either thrown away or are sent abroad, causing economic and environmental problems.

Lately, a different trend is springing up in opposition to consumerism – the 'buy nothing' trend. It originated in Canada in the early 1990s and then moved to the US, where it became a rejection of the overspending and overconsumption of Black Friday and Cyber Monday during Thanksgiving weekend. On Buy Nothing Day people organise various types of protests and cut up their credit cards. Throughout the year, Buy Nothing groups organise the exchange and repair of items they already own.

The trend has now reached influencers on social media who usually share posts of clothing and make-up that they recommend for people to buy. Some YouTube stars now encourage their viewers not to buy anything at all for periods as long as a year. Two friends in Canada spent a year working towards buying only food. For the first three months they learned how to live without buying electrical goods, clothes or things for the house. For the next stage, they gave up services, for example haircuts, eating out at restaurants or buying petrol for their cars. In one year, they'd saved \$55,000.

The changes they made meant two fewer cars on the roads, a reduction in plastic and paper packaging and a positive impact on the environment from all the energy saved. If everyone followed a similar plan, the results would be impressive. But even if you can't manage a full year without going shopping, you can participate in the anti-consumerist movement by refusing to buy things you don't need. Buy Nothing groups send a clear message to companies that people are no longer willing to accept the environmental and human cost of overconsumption.

Sub questions

Question Number : 37 Question Id : 90468410714 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The phrase '*bombard people*' in paragraph 1 means:

Options :

90468437288. ✗ to shower people

90468437289. ✗ to flood people

90468437290. ✗ to attack people

90468437291. ✓ to overwhelm people

Question Number : 38 Question Id : 90468410715 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The author describes clothes as '*disposable items*' because they can be:

Options :

90468437292. ✗ thrown away easily

90468437293. ✓ worn a few times and discarded

90468437294. ✖ bought for cheap prices online

90468437295. ✖ used in landfill sites

Question Number : 39 Question Id : 90468410716 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following sentences is NOT TRUE?

Options :

90468437296. ✖ The British are spending money they don't have on things they don't need.

90468437297. ✖ Donating to charities abroad has a negative influence on the environment.

90468437298. ✔ The Buy Nothing movement encourages people to embrace consumerism.

90468437299. ✖ The Buy Nothing groups have had an impact on social media advertisers.

Question Number : 40 Question Id : 90468410717 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following sentences best captures the main idea of this text?

Options :

90468437300. ✖ Consumerism is rampant in Britain and people spend money they don't have on the things they don't need.

90468437301. ✖ The Buy Nothing movement, which began in Canada as a reaction to the consumerism, soon spread to America.

90468437302. ✔ The Buy Nothing movement promotes the idea of not buying things over extended periods of time, thus cutting down on consumption.

90468437303. ✖ Companies are slowly beginning to realise that they cannot force people to buy things through aggressive advertising and discount sales.

Question Number : 41 Question Id : 90468410718 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Choose the best option to complete the statement:

According to the author the 'buy nothing' movement is:

Options :

90468437304. ✖ mere anti-consumerism

90468437305. ✖ an artefact of 'social media'

90468437306. ✖ glorifying 'penny-pinching'

90468437307. ✔ rejection of 'overconsumption'

Reasoning and General Intelligence

Group Number :	3
Group Id :	9046841464
Group Maximum Duration :	0
Group Minimum Duration :	0
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	40
Is this Group for Examiner? :	No

Reasoning and General Intelligence

Section Id :	9046841529
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	28
Number of Questions to be attempted :	28
Section Marks :	40
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	9046842305
Question Shuffling Allowed :	Yes

Question Id : 90468410719 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (42 to 46)

Following are the criteria for admitting students to a Management Course:

The student candidate must:

1) be a graduate with at least 60% marks in the aggregate and more than 65% in English.

- 2) be of at least 20 years age as on 31 December 2019
3) have obtained at least 65% in the entrance test and more than 60% in the interview.

However, if a student fulfils all the above criteria EXCEPT:

- 4) at (1) and/or (2) above but has obtained at least 80% in the entrance test, the case should be referred to the Principal.
5) at (2) and/or (3) above but is an ST candidate securing more than 70% in English at the graduation stage, the case should be referred to the Director.

Based on the criteria given above and without assuming any additional information, you have to take a decision for the candidates whose profiles have been given in the five questions. Mark your answer by choosing the appropriate option in each case.

Sub questions

Question Number : 42 Question Id : 90468410720 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Shamita was born in 1998 and is a commerce graduate scoring 67% in the aggregate as well as in English. She is an ST candidate who secured 62% in the interview and 65% in the entrance test. What decision would be taken for her?

Options :

90468437308. ✘ She would not be admitted

90468437309. ✔ She would be admitted

90468437310. ✘ Her case is to be referred to the Principal

90468437311. ✘ Her case is to be referred to the Director

Question Number : 43 Question Id : 90468410721 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Sambeet passed the graduate examination in August 2017 at the age of 18 with 70% in English and 65% marks in the aggregate. He scored 68% in the entrance test and 60% in the interview. What decision would be taken for him?

Options :

90468437312. ✔ He would not be admitted

90468437313. ✘ He would be admitted

90468437314. ✘ His case is to be referred to the Principal

90468437315. ✘ His case is to be referred to the Director

Question Number : 44 Question Id : 90468410722 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Ankit obtained 78% in the entrance test and 62% in the interview. He was 19 years old when he passed his graduate examination in June 2018 with 65% in the aggregate as well as in English. He is an ST candidate. What decision would be taken for him?

Options :

90468437316. ✔ He would not be admitted

90468437317. ✘ He would be admitted

90468437318. ✘ His case is to be referred to the Principal

90468437319. ✘ His case is to be referred to the Director

Question Number : 45 Question Id : 90468410723 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Shweta, an ST candidate, born in 1997 passed the graduate examination with 65% in the aggregate as well as in English at the graduation stage. She secured 80% in the entrance test and 63% in the interview. What decision would be taken for her?

Options :

90468437320. ✘ She would be admitted

90468437321. ✘ She would not be admitted

90468437322. ✔ Her case is to be referred to the Principal

90468437323. ✘ Her case is to be referred to the Director

Question Number : 46 Question Id : 90468410724 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Sakira passed her graduate examination scoring 70% in the aggregate and 72% in English. She was born into an ST family in 2001 and scored 65% in the interview and 75% of marks in the entrance test. What decision would be taken for her?

Options :

90468437324. ✘ She would be admitted

90468437325. ✘ She would not be admitted

90468437326. ✘ Her case is to be referred to the Principal

90468437327. ✔ Her case is to be referred to the Director

Sub-Section Number :

2

Sub-Section Id :

9046842306

Question Shuffling Allowed :

Yes

Question Number : 47 Question Id : 90468410725 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A team of four with equal number of boys and girls is to be formed from among four girls A, B, C and D and four boys K, L, M and N with the following conditions.

- i. B and M will not be put together
- ii. C and N will always be together
- iii. D cannot go with K
- iv. A will be selected, if M is selected and vice-versa

Which of the following teams can be formed?

Options :

90468437328. ✖ BDNL

90468437329. ✖ ALCN

90468437330. ✔ CNKB

90468437331. ✖ CNBD

Question Number : 48 Question Id : 90468410726 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A team of four with at least two girls is to be formed from among five boys M, N, S, T and Z and three girls P, Q and R with the following conditions.

- i. Q will always go with S
- ii. R and N cannot go together
- iii. M and P cannot go together
- iv. P will be put with N

Which of the following teams can be formed?

Options :

90468437332. ✖ PSQZ

90468437333. ✖ MNPR

90468437334. ✖ SQMT

90468437335. ✔ RSQZ

Question Number : 49 Question Id : 90468410729 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

'A + B' means 'A is mother of B'

'A - B' means 'A is father of B'

'A × B' means 'A is sister of B'

'A ÷ B' means 'A is Brother of B'

If $S \times M + Z - Y \times T + H \div R$, then how is M related to T?

Options :

90468437344. ✖ Mother

90468437345. ✖ Maternal grandmother

90468437346. ✔ Paternal grandmother

90468437347. ✖ Paternal grandfather

Question Number : 50 Question Id : 90468410730 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

1. Some women are employed persons.
2. All employed persons have maids in their families.

Conclusions:

- I. All families having maids have employed women.
- II. Some women have maids in their families.

Options :

90468437348. ✖ Only conclusion I follows

90468437349. ✔ Only conclusion II follows

90468437350. ✖ Both conclusions I and II follow

90468437351. ✖ Neither conclusion I nor II follows

Question Number : 51 Question Id : 90468410732 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some tigers are vertebrates.
2. All vertebrates are animals.
3. All tigers are mammals.

Conclusions:

- I. Some animals are mammals.
- II. Some mammals are vertebrates.
- III. No animal is mammal.

Options :

- 90468437356. ✖ Only conclusion II follows
- 90468437357. ✖ Only conclusion II and either conclusions I or III follow
- 90468437358. ✖ Both conclusions II and III follow
- 90468437359. ✔ Only conclusions I and II follow

Question Number : 52 Question Id : 90468410735 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statements contain data that are sufficient to answer the question.

Question:

How B is exactly related to D?

Statements:

- I. B's sister C is the mother of A, who is the brother of D.
- II. C is the wife of F and has a brother B and a son A whose sister is D.

Options :

- 90468437368. ✖ Statement I alone is sufficient
- 90468437369. ✔ Statement II alone is sufficient
- 90468437370. ✖ Either statement I alone or statement II alone is sufficient
- 90468437371. ✖ Both the statements I and II together are not sufficient.

Question Number : 53 Question Id : 90468410736 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

You are given a question and two statements. Identify which of the statements is/are sufficient to answer the question.

Question:

Houses A, B, C, D, E, F, G and H are in two rows, each having four houses. The houses in one row are facing the houses in the other. Which house is facing E?

Statements:

- I. C is diagonally opposite H and F is facing A, which is to the immediate right of E.
- II. D is at one end of a row and is facing H which is diagonally opposite C and A is to the left of F facing G.

Options :

- 90468437372. ✖ Statement I alone is sufficient
- 90468437373. ✖ Statement II alone is sufficient
- 90468437374. ✖ Either statement I alone or statement II alone is sufficient
- 90468437375. ✔ Both the statements I and II together are not sufficient.

Question Number : 54 Question Id : 90468410738 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

You are given a question and two statements. Identify which of the statements is/are sufficient/necessary to answer the question.

Question:

Who is the youngest among M, N, P, Q and R?

Statements:

- I. Both P and R are younger than M, who is older than N, and Q is the oldest.
- II. N is younger than R and older than P.

Options :

- 90468437380. ✖ Statement I alone is sufficient
- 90468437381. ✖ Statement II alone is sufficient
- 90468437382. ✖ Either statement I alone or statement II alone is sufficient
- 90468437383. ✔ Both the statements I and II together are necessary

Question Number : 55 Question Id : 90468410739 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statements contain data that are sufficient to answer the question.

Question:

Will the number be always divisible by 9?

Statements:

- I. The number is obtained by adding 8 times of the sum of the digits in any four-digit number with the number itself.
 II. The number is obtained by adding 4 times of the sum of the digits in any four-digit number with the number itself.

Options :

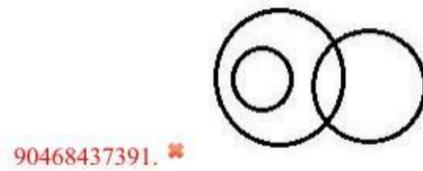
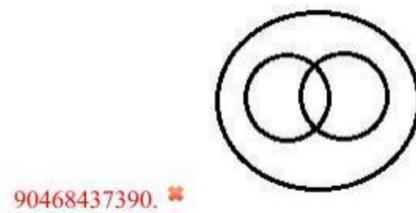
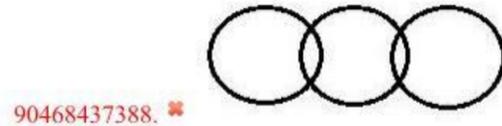
90468437384. ✓ Statement I alone is sufficient
 90468437385. ✗ Statement II alone is sufficient
 90468437386. ✗ Either statement I alone or statement II alone is sufficient
 90468437387. ✗ Both the statements I and II together are not sufficient.

Question Number : 56 Question Id : 90468410740 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the Venn diagram that best represents the relationship between the following classes.

Football fans, Athletes, Students

Options :



Question Number : 57 Question Id : 90468410744 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Study the given symbols.

- A @ B means A is not smaller than B.
 A # B means A is not greater than B.
 A & B means A is neither smaller than nor equal to B.
 A % B means A is neither greater than nor equal to B.
 A \$ B means A is neither smaller than nor greater than B.

Based on the symbols, read the given statements and conclusions carefully and decide which of the conclusions is/are true.

Statements:

- A) R @ Q
 B) S % P
 C) Q \$ S

Conclusions:

- I. Q # P
 II. P @ R
 III. S # R

Options :

90468437400. ✗ Only conclusions I is true
 90468437401. ✗ Both conclusions I and II are true
 90468437402. ✓ Only conclusion III is true
 90468437403. ✗ Both conclusions II and III are true

Question Number : 58 Question Id : 90468410745 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Study the given symbols.

A @ B means A is not smaller than B.

A # B means A is not greater than B.

A & B means A is neither smaller than nor equal to B.

A % B means A is neither greater than nor equal to B.

A \$ B means A is neither smaller than nor greater than B.

Based on the symbols, read the given statements and conclusions carefully and decide which of the conclusions is/are true.

Statements:

A) G & M

B) K @ G

C) M \$ H

Conclusions:

I. M % K

II. H # G

III. K & H

Options :

90468437404. ✖ Both conclusions I and II are true

90468437405. ✖ Both conclusions II and III are true

90468437406. ✔ Both conclusions I and III are true

90468437407. ✖ All the conclusions I, II and III are true

Question Number : 59 Question Id : 90468410746 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If the signs 'x' and '-' are interchanged in each of the equations given as options, then select the option which is correct.

Options :

90468437408. ✖ $10 \times 2 + 4 - 3 = 12 + 6$

90468437409. ✖ $9 + 8 \times 6 - 2 = 8 + 3$

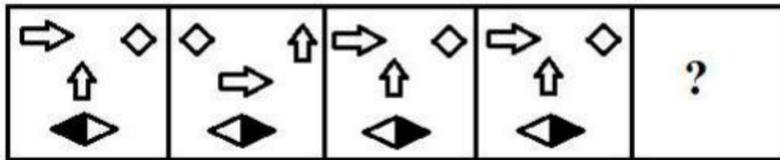
90468437410. ✔ $6 - 4 + 8 \times 2 = 6 - 5$

90468437411. ✖ $4 \times 2 - 6 + 12 = 6 - 2$

Question Number : 60 Question Id : 90468410747 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Select the figure that will come next in the following figure series.



Options :

90468437412. ✖

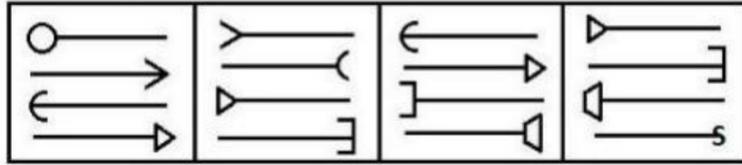
90468437413. ✖

90468437414. ✔

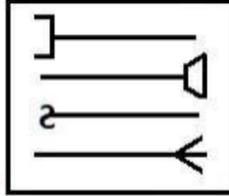
90468437415. ✖

Question Number : 61 Question Id : 90468410749 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
 Correct Marks : 1 Wrong Marks : 0

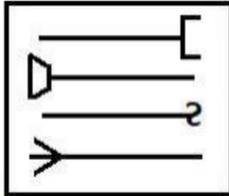
Find the figure that will come next in the following figure series.



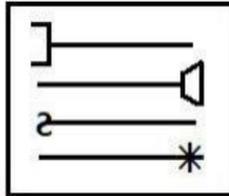
Options :



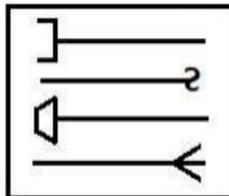
90468437420. ✓



90468437421. ✗



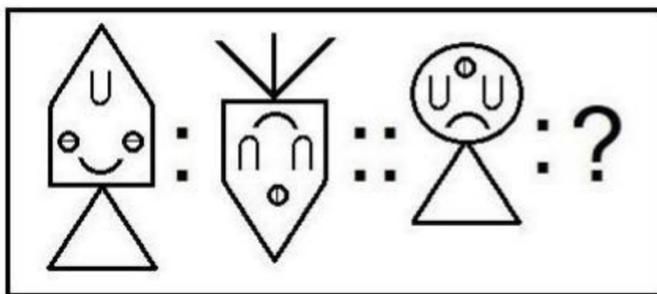
90468437422. ✗



90468437423. ✗

Question Number : 62 Question Id : 90468410750 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
 Correct Marks : 1 Wrong Marks : 0

Select the option that is related to the third figure in the same way as the second figure is related to the first figure.



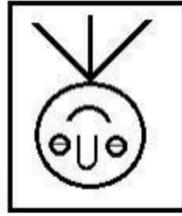
Options :



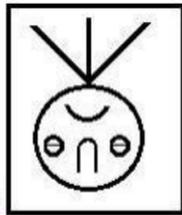
90468437424. ✗



90468437425. ✖



90468437426. ✖



90468437427. ✔

Sub-Section Number :

3

Sub-Section Id :

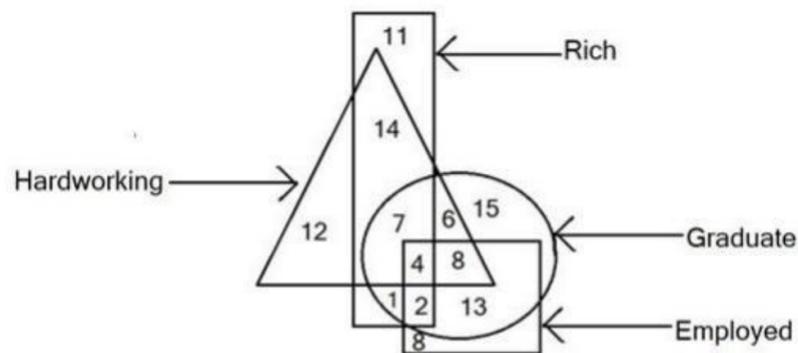
9046842307

Question Shuffling Allowed :

Yes

Question Id : 90468410741 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (63 to 64)

Study the given figure and answer the question that follows:



In the figure, the triangle stands for 'hardworking'; the circle stands for 'graduate'; the rectangle stands for 'rich' and the square stands for 'employed'. The numbers in different segments show the number of persons.

Sub questions

Question Number : 63 Question Id : 90468410742 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

How many employed graduates are hardworking but NOT rich?

Options :

90468437392. ✖ 3

90468437393. ✖ 4

90468437394. ✖ 6

90468437395. ✔ 8

Question Number : 64 Question Id : 90468410743 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

How many hardworking graduates are either rich or employed but NOT both?

Options :

90468437396. ✔ 15

90468437397. ✖ 14

90468437398. ✖ 13

90468437399. ✖ 11

Sub-Section Number :

4

Sub-Section Id :

9046842308

Question Shuffling Allowed :

Yes

Question Number : 65 Question Id : 90468410727 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Six friends A, B, C, D, E and F are sitting in straight line. A is third to the right of F. D is to the immediate left of F and is at one end of the row. B is sitting between A and C. There is one person between B and E. Who is sitting at the other end?

Options :

90468437336. ✖ A

90468437337. ✔ E

90468437338. ✖ B

90468437339. ✖ F

Question Number : 66 Question Id : 90468410728 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Among five objects, S is twice as heavy as Q. P is one and a half times as heavy as R, which is twice as heavy as T. T is half as heavy as Q. Which is the heaviest of all the five objects?

Options :

90468437340. ✖ R

90468437341. ✔ S

90468437342. ✖ Q

90468437343. ✖ P

Question Number : 67 Question Id : 90468410731 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some streams are rivers.
2. Some rivers are water bodies.

Conclusions:

- I. No water body is stream.
- II. Some streams are water bodies.
- III. Some rivers are both streams and water bodies.

Options :

90468437352. ✖ Both conclusions I and II follow

90468437353. ✖ Both conclusions II and III follow

90468437354. ✖ Both conclusions I and III follow

90468437355. ✔ None of the conclusions I, II or III follow

Question Number : 68 Question Id : 90468410733 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.

Question:

Should the non-government organisations be allowed to work in government schools to enhance the quality of education?

Arguments:

- I. Yes. The non-government organisations would involve themselves more passionately than the Government to improve the quality of education.
- II. No. The non-government organisations cannot harness the knowhow to improve the quality of teaching.

Options :

90468437360. ✖ Only argument I is strong

90468437361. ✖ Only argument II is strong

90468437362. ✖ Both arguments I and II are strong

90468437363. ✔ Neither argument I nor II is strong

Question Number : 69 Question Id : 90468410734 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Consider the given statement and decide which of the given assumptions is/are implicit in the statement.

Statement:

Doctors, when posted in rural areas, should be given additional incentives.

Assumptions:

- I. Many doctors do not prefer to go to rural areas.
- II. Additional incentives are likely to motivate doctors to go to rural areas.

Options :

- 90468437364. ✖ Only assumption I is implicit
- 90468437365. ✖ Only assumption II is implicit
- 90468437366. ✔ Both assumptions I and II are implicit
- 90468437367. ✖ Neither assumption I nor II is implicit

Question Number : 70 Question Id : 90468410737 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

You are given a question and two statements. Identify which of the statements is/are sufficient/necessary to answer the question.

Question:

Among four objects A, B, C and D, which is the lightest of all?

Statements:

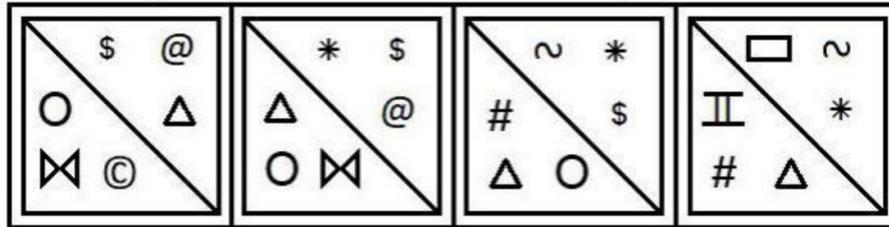
- I. D is twice as heavy as B and one and a half times as heavy as A. C is twice as heavy as A.
- II. D weighs as much as A, B and C together and B weighs half as much as A and C together with A weighing more than C.

Options :

- 90468437376. ✖ Statement I alone is sufficient
- 90468437377. ✖ Statement II alone is sufficient
- 90468437378. ✔ Either statement I alone or statement II alone is sufficient
- 90468437379. ✖ Both the statements I and II together are necessary

Question Number : 71 Question Id : 90468410748 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Select the figure that will come next in the following series.



Options :



Sub-Section Number :

5

Sub-Section Id :

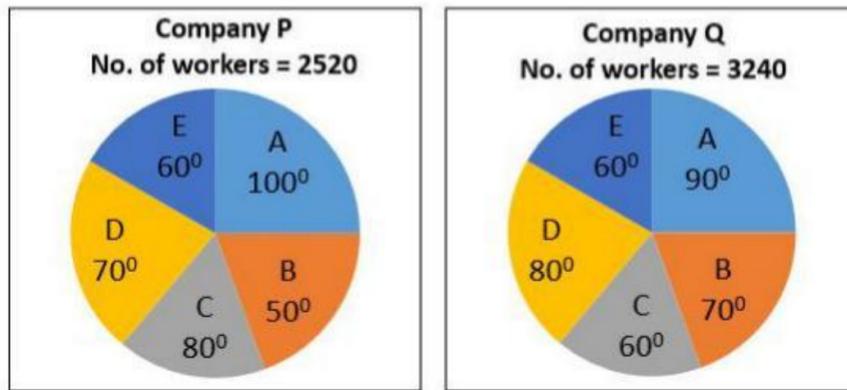
9046842309

Question Shuffling Allowed :

Yes

Question Id : 90468410751 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (72 to 75)

The given pie charts show the number of workers and the distribution of workers (in degrees) from five states A, B, C, D and E in two companies P and Q. Study the charts and answer the questions that follow:



Sub questions

Question Number : 72 Question Id : 90468410752 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The number of workers from states C and E in Company Q exceeds the workers from the same states in Company P by approximately:

Options :

- 90468437428. ✖ 9.25%
- 90468437429. ✔ 10.20%
- 90468437430. ✖ 10.75%
- 90468437431. ✖ 11.40%

Question Number : 73 Question Id : 90468410753 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which of the states has more number of workers in Company P than in Company Q?

Options :

- 90468437432. ✖ A
- 90468437433. ✖ B
- 90468437434. ✔ C
- 90468437435. ✖ E

Question Number : 74 Question Id : 90468410754 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The number of workers from states C, D and E in Company Q is approximately what per cent of the number of workers from the same states in Company P (rounded off to the nearest integer)?

Options :

- 90468437436. ✖ 109%
- 90468437437. ✖ 112%
- 90468437438. ✔ 122%
- 90468437439. ✖ 124%

Question Number : 75 Question Id : 90468410755 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The ratio of male to female workers from states A and B together is 4 : 3 for Company P and is 5 : 7 for Company Q. From both the states, the number of female workers in Company Q exceeds the number of female workers in Company P by:

Options :

- 90468437440. ✖ 270
- 90468437441. ✖ 290
- 90468437442. ✖ 350
- 90468437443. ✔ 390

Sub-Section Number :

6

Sub-Section Id :

9046842310

Question Shuffling Allowed :

Yes

Question Id : 90468410756 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (76 to 79)

The table shows the percentage of marks secured by five students in five subjects in their class annual examination.

Study the table and answer the questions that follow.

Percentage of marks secured by five students in five subjects					
(Subject-wise maximum marks are given in the brackets)					
Student	Physics (150)	Chemistry (150)	Zoology (150)	English (100)	Hindi (75)
P	80	75	65	72	74
Q	68	73	72	74	77
R	70	67	68	68	70
S	75	80	75	73	80
T	70	68	76	75	69

Sub questions

Question Number : 76 Question Id : 90468410757 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

What is the average marks secured by student S in all the five subjects?

Options :

90468437444. ✖ 94.8

90468437445. ✖ 95.2

90468437446. ✔ 95.6

90468437447. ✖ 96.8

Question Number : 77 Question Id : 90468410758 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

How many students have secured the highest marks in more than one subject?

Options :

90468437448. ✖ 4

90468437449. ✖ 3

90468437450. ✔ 2

90468437451. ✖ 1

Question Number : 78 Question Id : 90468410759 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

A student is declared 'failed' if he/she secures less than 100 marks in subjects carrying 150 marks each and/or less than 70 marks in the subject carrying 100 marks and/or less than 50 marks in the subject carrying 75 marks, then how many students passed the examination?

Options :

90468437452. ✖ 1

90468437453. ✖ 2

90468437454. ✔ 3

90468437455. ✖ 4

Question Number : 79 Question Id : 90468410760 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The total marks of student R in the three science subjects exceeds his total marks in the two language subjects by approximately:

Options :

90468437456. ✔ 155%

90468437457. ✖ 150%

90468437458. ✖ 148%

90468437459. ✖ 145%

Sub-Section Number :

7

Sub-Section Id :

9046842311

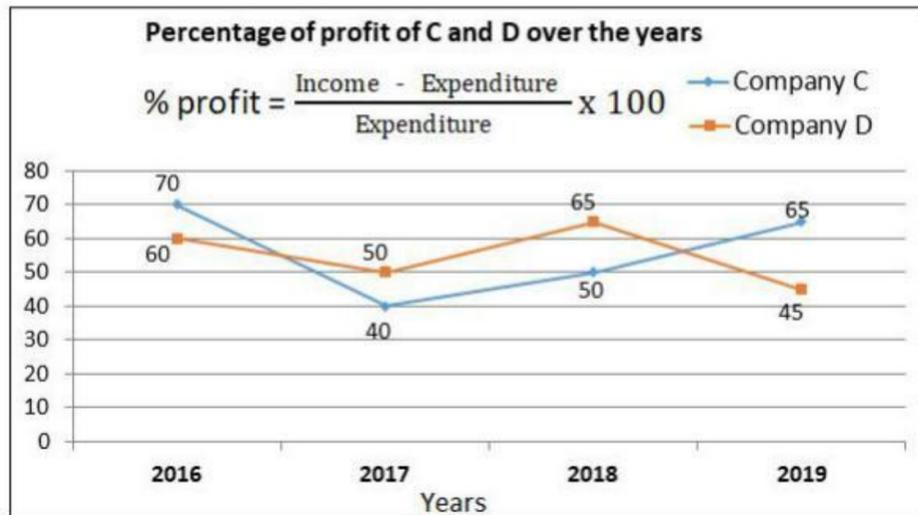
Question Shuffling Allowed :

Yes

Question Id : 90468410761 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (80 to 81)

The following graph shows the percentage of profit of two Companies C and D over the period of four years.

Study the graph and answer the questions that follow.



Sub questions

Question Number : 80 Question Id : 90468410762 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If the incomes of both the Companies in the year 2018 are the same, then what is the ratio of their expenditures?

Options :

- 90468437460. ✖ 7 : 6
- 90468437461. ✔ 11 : 10
- 90468437462. ✖ 10 : 11
- 90468437463. ✖ 13 : 10

Question Number : 81 Question Id : 90468410763 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If the amount of expenditure remains the same over the years for Company D, in which of the following years, the amount of profit (income – expenditure) will be minimum for Company D?

Options :

- 90468437464. ✖ 2016
- 90468437465. ✖ 2017
- 90468437466. ✖ 2018
- 90468437467. ✔ 2019

Quantitative and Numerical Ability

Group Number :	4
Group Id :	9046841465
Group Maximum Duration :	0
Group Minimum Duration :	0
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	40
Is this Group for Examiner? :	No

Quantitative and Numerical Ability

Section Id :	9046841530
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	40
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	9046842312

Question Shuffling Allowed :

Yes

Question Number : 82 Question Id : 90468410764 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let $A = \{2,3,4,8,10\}$, $B = \{3,4,5,10,12\}$ and $C = \{4,5,6,12,14\}$ be the three sets. If $D = [(A \cup B) \cap (A \cup C)] - (B \cap C)$, then the number of elements in D is:

Options :

90468437468. ✖ 3

90468437469. ✔ 4

90468437470. ✖ 5

90468437471. ✖ 6

Question Number : 83 Question Id : 90468410765 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The number of elements in sets X and Y are p and q respectively. The total number of subsets of X is 112 more than that of Y. What is the value of $(2p - 3q)$?

Options :

90468437472. ✔ 2

90468437473. ✖ 4

90468437474. ✖ 6

90468437475. ✖ 8

Question Number : 84 Question Id : 90468410766 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let $A = \{2,4,6,9\}$ and $B = \{4,6,18,27,81\}$ be two sets. If $C = \{(x,y) \mid x \in A, y \in B \text{ such that } x \text{ is a factor of } y \text{ and } x < y\}$, then $n(C)$ is:

Options :

90468437476. ✖ 5

90468437477. ✖ 6

90468437478. ✔ 7

90468437479. ✖ 8

Question Number : 85 Question Id : 90468410767 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If function $f: \mathbb{R} \rightarrow \mathbb{R}$ is defined by $f(x) = 2x - 3$ and $g: \mathbb{R} \rightarrow \mathbb{R}$ is defined by $g(x) = x^3 + 5$, then the value of $(f \circ g)^{-1}(-9)$ is:

Options :

90468437480. ✖ -1

90468437481. ✔ -2

90468437482. ✖ 2

90468437483. ✖ 1

Question Number : 86 Question Id : 90468410768 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If $f\left(1 - \frac{1}{x}\right) = \frac{5x+1}{x}$, $x \neq 0$, then $f(x) = k - x$, where $k = ?$

Options :

90468437484. ✔ 6

90468437485. ✖ 5

90468437486. ✖ 4

90468437487. ✖ 3

Question Number : 87 Question Id : 90468410769 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If $f(x) = 4x^3 - 8$, then what is the value of $f^{-1}(-8) + f^{-1}(24)$?

Options :

90468437488. ✖ -1

90468437489. ✖ 1

90468437490. ✔ 2

90468437491. ✖ 3

Question Number : 88 Question Id : 90468410770 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

There are 980 students in a school, out of which 50% play cricket, 30% play basketball and 40% play football. If 60 students play cricket and basketball, 48 students play basketball and football, 180 students play cricket and football, and 35 students play all the three games, then how many students play none of the games?

Options :

90468437492. ✖ 73
 90468437493. ✖ 67
 90468437494. ✖ 63
 90468437495. ✔ 57

Question Number : 89 Question Id : 90468410771 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The value of $\left(2\frac{2}{3} \times 4\frac{3}{8} \div 2\frac{1}{2}\right) \div \left[\left(2\frac{1}{3} + 2\frac{1}{2} - \frac{1}{6}\right) \div 2\frac{1}{3}\right]$ of $2\frac{4}{5}$ lies between:

Options :

90468437496. ✖ 0.6 and 0.7
 90468437497. ✖ 0.7 and 0.8
 90468437498. ✔ 0.8 and 0.9
 90468437499. ✖ 0.9 and 1

Question Number : 90 Question Id : 90468410772 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

In a class, $\frac{3}{5}$ of the total number of students are boys and the rest are girls. $\frac{4}{5}$ of the number of girls scored more than 80 marks (out of 150 marks). If $\frac{3}{5}$ of the total number of students scored more than 80 marks in the same examination, then what fraction of the total number of boys represent those boys who scored 80 marks or less?

Options :

90468437500. ✖ $\frac{7}{15}$
 90468437501. ✔ $\frac{8}{15}$
 90468437502. ✖ $\frac{7}{25}$
 90468437503. ✖ $\frac{8}{25}$

Question Number : 91 Question Id : 90468410773 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The sum of the three fractions a, b and c, where $a < b < c$, is $\frac{37}{24}$. When a is divided by b, the result is $\frac{3}{16}$, which is less than c by $\frac{9}{16}$. What is the difference between (a + b) and c?

Options :

90468437504. ✖ $\frac{1}{12}$
 90468437505. ✔ $\frac{1}{24}$
 90468437506. ✖ $\frac{1}{16}$
 90468437507. ✖ $\frac{1}{32}$

Question Number : 92 Question Id : 90468410774 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The value of $\frac{(0.\overline{66} + 0.\overline{33}) \div (0.1\overline{8} \times 11 \times 0.8\overline{3})}{0.2\overline{7}(0.8\overline{3} \div 0.1\overline{6})}$ is:

Options :

90468437508. ✖ $\frac{12}{17}$

90468437509. ✖ $\frac{18}{17}$

90468437510. ✖ $\frac{12}{85}$

90468437511. ✔ $\frac{36}{85}$

Question Number : 93 Question Id : 90468410775 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The value of $\frac{0.5 \times 0.0073 \times 14.5 \times 0.7}{0.0203 \times 2.92} - \frac{(0.25)^2 + (0.25)(19.99)}{(12.12)^2 - (8.12)^2}$ is:

Options :

90468437512. ✔ $\frac{9}{16}$

90468437513. ✖ $\frac{3}{8}$

90468437514. ✖ $\frac{1}{2}$

90468437515. ✖ $\frac{5}{8}$

Question Number : 94 Question Id : 90468410776 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The sum of the first 12 terms of the series $\frac{5}{6} + \frac{1}{6} + \frac{1}{14} + \frac{5}{126} + \dots$, is:

Options :

90468437516. ✖ $1\frac{2}{5}$

90468437517. ✔ $1\frac{1}{5}$

90468437518. ✖ $1\frac{1}{6}$

90468437519. ✖ $1\frac{1}{3}$

Question Number : 95 Question Id : 90468410777 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If $\sqrt{11 + 2\sqrt{18}} + \sqrt{17 - 12\sqrt{2}} = a + b\sqrt{2}$, then the value of $(3a - 2b)$ is:

Options :

90468437520. ✖ 16

90468437521. ✖ 17

90468437522. ✖ 19

90468437523. ✔ 20

Question Number : 96 Question Id : 90468410778 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a class, 60% of the students are girls and the rest are boys. 40% of the girls and 65% of the boys are players. The number of girls who are NOT players is 54. By what percentage is the number of girls who are players more than the number of boys who are NOT players?

Options :

90468437524. ✖ $41\frac{2}{3}\%$

90468437525. ✖ $45\frac{1}{3}\%$

90468437526. ✔ $71\frac{3}{7}\%$

90468437527. ✖ $74\frac{4}{7}\%$

Question Number : 97 Question Id : 90468410779 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Rekha has two items A and B. When she sells A at a loss of 15% and B at a profit of 25%, she earns no profit neither incurs loss. When she sells A at a profit of 25% and B at a loss of 10%, she earns a profit of ₹114. What is the difference between the cost prices of A and B?

Options :

90468437528. ✖ ₹200

90468437529. ✔ ₹240

90468437530. ✖ ₹250

90468437531. ✖ ₹280

Question Number : 98 Question Id : 90468410780 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A shopkeeper sells sarees for ₹1,056 each, after giving a discount of 12% on the marked price of the saree. Had he not given any discount, then he would have earned a profit of 25% on the cost price. The cost price of each saree is:

Options :

90468437532. ✖ ₹880

90468437533. ✖ ₹920

90468437534. ✔ ₹960

90468437535. ✖ ₹980

Question Number : 99 Question Id : 90468410781 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In 2018, the ratio of the price of articles A and B was 5 : 7. In 2019, the price of A increased by 20% and that of B decreased by ₹6.72. If the ratio of the price of A and B in 2019 is 20 : 21, then the price of B in 2018 was:

Options :

90468437536. ✔ ₹67.20

90468437537. ✖ ₹68.60

90468437538. ✖ ₹69.30

90468437539. ✖ ₹70

Question Number : 100 Question Id : 90468410782 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Anuja borrows a sum of ₹13,024 from a finance company and has to return it in two equal annual instalments. If the rate of interest charged is 12.5% p.a., compounded yearly, then the total interest paid by her is:

Options :

90468437540. ✖ ₹2,384

90468437541. ✔ ₹2,496

90468437542. ✖ ₹2,508

90468437543. ✖ ₹2,556

Question Number : 101 Question Id : 90468410783 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A boat covers a round trip journey between two points in a river. The points are 43.2 km apart. The time taken for the upstream journey is 1.8 hours more than the time taken for the downstream journey. If the speed of the water in the river is 2 km/h, then the total time (in hours) taken by the boat for a journey of 48 km upstream and 54 km downstream is:

Options :

90468437544. ✖ $9\frac{1}{2}$

90468437545. ✖ $9\frac{3}{4}$

90468437546. ✖ $10\frac{3}{4}$

90468437547. ✔ $10\frac{1}{2}$

Question Number : 102 Question Id : 90468410784 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The cross-section of a canal is a rectangle surmounted by a semicircle. The length of the rectangle is the diameter of the semicircle and is equal to 10.5 m. The breadth of the rectangle is 6 m. If the water is flowing at a speed of 18 km/h,

then the volume (in kilolitres) of the water discharged in 16 seconds is (take $\pi = \frac{22}{7}$):

Options :

90468437548. ✖ 8,408

90468437549. ✖ 8,480

90468437550. ✔ 8,505

90468437551. ✖ 8,580

Question Number : 103 Question Id : 90468410785 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

In an arithmetic progression a_1, a_2, \dots, a_n , if $a_1 + a_3 + a_5 = 108$ and $a_2 + a_4 + a_6 = 102$, then the 16th term of the progression is:

Options :

90468437552. ✖ 17

90468437553. ✖ 19

90468437554. ✔ 10

90468437555. ✖ 12

Question Number : 104 Question Id : 90468410786 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

In an arithmetic progression with 23 terms, the sum of its 21st, 22nd and 23rd terms is 264, and the sum of the three middle terms is 144. What is the 18th term of the progression?

Options :

90468437556. ✖ 62

90468437557. ✖ 68

90468437558. ✔ 72

90468437559. ✖ 78

Question Number : 105 Question Id : 90468410787 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The sum of an infinite geometric series is 20 and the sum of the squares of its terms is 100. What is the sum of the first three terms of the original series?

Options :

90468437560. ✔ 15.68

90468437561. ✖ 14.64

90468437562. ✖ 13.32

90468437563. ✖ 12.28

Question Number : 106 Question Id : 90468410788 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If $15x^2 - 9x + 1 = 0$, then the value of $9x^2 + (25x^2)^{-1}$ is:

Options :

90468437564. ✖ $\frac{41}{25}$

90468437565. ✓ $\frac{51}{25}$

90468437566. ✗ $\frac{66}{25}$

90468437567. ✗ $\frac{13}{25}$

Question Number : 107 Question Id : 90468410789 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If $ax + by - a + b = 0$ and $bx - ay - a - b = 0$, then the value of $(3x - 2y + 4)$ is:

Options :

- 90468437568. ✗ 5
- 90468437569. ✗ -1
- 90468437570. ✓ 9
- 90468437571. ✗ 10

Question Number : 108 Question Id : 90468410790 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

If one root of the equation $x^2 + (2k + 1)x + (k^2 + 2) = 0$ is twice the other root, then the value of k is a root of the equation:

Options :

- 90468437572. ✗ $x^2 - 5x - 3 = 0$
- 90468437573. ✗ $x^2 + 5x + 3 = 0$
- 90468437574. ✓ $x^2 - 5x + 4 = 0$
- 90468437575. ✗ $x^2 + 5x - 4 = 0$

Question Number : 109 Question Id : 90468410791 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The equation $|x^2 + x - 6| - 3x + 7 = 0$ has:

Options :

- 90468437576. ✗ 4 real roots
- 90468437577. ✗ 2 real roots
- 90468437578. ✗ 1 real root
- 90468437579. ✓ no real root

Question Number : 110 Question Id : 90468410792 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

When 3 is subtracted from each of the given 'n' numbers, then the sum of the numbers so obtained is 84. When 8 is added to each of the given 'n' numbers, then the sum of the resulting numbers is 216. The mean of the given 'n' numbers is:

Options :

- 90468437580. ✗ 9.5
- 90468437581. ✓ 10
- 90468437582. ✗ 12
- 90468437583. ✗ 12.5

Question Number : 111 Question Id : 90468410793 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The mean of five observations is 4.4 and their variance is 8.24. If three of the five observations are 1, 4 and 9, then the product of other two observations is:

Options :

- 90468437584. ✗ 8
- 90468437585. ✗ 10
- 90468437586. ✓ 12
- 90468437587. ✗ 15

Question Number : 112 Question Id : 90468410794 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The mean deviation about the mean of the dataset 22, 24, 30, 27, 29, 31, 25, 28, 41, 43, 30 is:

Options :

- 90468437588. ✓ 4.5

90468437589. ✖ 4.9

90468437590. ✖ 5.3

90468437591. ✖ 5.5

Question Number : 113 Question Id : 90468410795 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Consider the following distribution:

Age (in years)	5 – 7	7 – 9	9 – 11	11 – 13	13 – 15
Frequency	16	x	10	6	5

The mean of the distribution is 8.84 years. The value of x is:

Options :

90468437592. ✖ 8

90468437593. ✔ 13

90468437594. ✖ 18

90468437595. ✖ 23

Question Number : 114 Question Id : 90468410796 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let x be the median of the data:

20, 50, 60, 53, 77, 88, 90, 40, 30, 70, 25, 45, 64, 72, 8, 15, 85, 60, 55, 28.

If y is the median of the same dataset when 25 and 28 are replaced by 52 and 82 respectively, then what is the value of $|x - y|$?

Options :

90468437596. ✖ 2.5

90468437597. ✖ 3

90468437598. ✔ 3.5

90468437599. ✖ 4

Question Number : 115 Question Id : 90468410797 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

An integer is selected at random from the set $\{100, 101, 102, \dots, 999\}$. What is the probability that the sum of the digits of the selected number is the same as the product of its digits?

Options :

90468437600. ✖ $\frac{1}{75}$

90468437601. ✔ $\frac{1}{150}$

90468437602. ✖ $\frac{1}{180}$

90468437603. ✖ $\frac{1}{60}$

Question Number : 116 Question Id : 90468410798 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

What is the standard deviation of the given data set:

25, 50, 45, 30, 70, 42, 36, 48, 34, 60 (correct to two decimal places).

Options :

90468437604. ✖ 13.33

90468437605. ✖ 13.31

90468437606. ✖ 13.14

90468437607. ✔ 13.08

Question Number : 117 Question Id : 90468410799 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

From the top of a tower of height 18 m, a bullet is shot at an angle of depression of 60° to hit a target lying on the ground. The bullet missed the target and hit a point in between the line joining the foot of the tower and the target, which is 6 m away from the target. What is the tangent of the angle of depression at which the bullet should have been shot so as to hit the target?

Options :

90468437608. ✖ $2(\sqrt{3} + 1)$

90468437609. ✖ $\frac{3}{2}(\sqrt{3} + 1)$

90468437610. ✖ $3(\sqrt{3} + 2)$

90468437611. ✔ $\frac{3}{2}(\sqrt{3} - 1)$

Question Number : 118 Question Id : 90468410800 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

If $\cos^2\theta(\tan^2\theta - \sin^2\theta) \times (\tan^2\theta + \cot^2\theta + 2) = k - 1$, then $k = ?$

Options :

90468437612. ✖ $\sec\theta$

90468437613. ✖ $\operatorname{cosec}\theta$

90468437614. ✔ $\sec^2\theta$

90468437615. ✖ $\operatorname{cosec}^2\theta$

Question Number : 119 Question Id : 90468410801 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

$\frac{\sin\theta}{\sec\theta + \tan\theta - 1} - \frac{\cos\theta}{\operatorname{cosec}\theta + \cot\theta - 1}$ is equal to:

Options :

90468437616. ✖ $\operatorname{cosec}\theta \sec\theta$

90468437617. ✖ $\sin\theta \cos\theta$

90468437618. ✖ $\sin\theta - \cos\theta$

90468437619. ✔ $\cos\theta - \sin\theta$

Question Number : 120 Question Id : 90468410802 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

If $3\tan\theta + \cot\theta = 5\operatorname{cosec}\theta$, where $0^\circ < \theta < 90^\circ$, then the value of $\frac{\cos\theta + \sin\theta}{\cos\theta - \sin\theta}$ is:

Options :

90468437620. ✖ $1 + \sqrt{3}$

90468437621. ✔ $2 + \sqrt{3}$

90468437622. ✖ $\frac{1 + \sqrt{3}}{2}$

90468437623. ✖ $\frac{2 + \sqrt{3}}{2}$

Question Number : 121 Question Id : 90468410803 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

The value of $\frac{\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 89^\circ}{\operatorname{cosec}^2 62^\circ - \tan 28^\circ \cot 62^\circ + (\sec^2 37^\circ - \cot^2 53^\circ)}$ is:

Options :

90468437624. ✖ 11

90468437625. ✓ $11\frac{1}{4}$

90468437626. ✘ $12\frac{1}{2}$

90468437627. ✘ $22\frac{1}{2}$

Display Notepad Post Exam

Group Number :	5
Group Id :	9046841466
Group Maximum Duration :	3
Group Minimum Duration :	3
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	1
Is this Group for Examiner? :	No

Display Notepad Post Exam

Section Id :	9046841531
Section Number :	1
Section type :	Offline
Mandatory or Optional :	Mandatory
Number of Questions :	1
Number of Questions to be attempted :	1
Section Marks :	1
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	9046842313
Question Shuffling Allowed :	No

Question Number : 122 Question Id : 90468410804 Question Type : SUBJECTIVE

Correct Marks : 1

Kindly display your Notepad (Rough Sheet) for 3 minutes before the webcam. Also show both pages both sides numbered 1,2,3 and 4. Kindly showcase as it is mandatory.

NMAT 2020 Question Paper QP3 with Solutions

Time Allowed :2 Hour

Maximum Marks :360

Total Questions :120

General Instructions

Read the following instructions very carefully and strictly follow them:

The test is of 2 hours duration. The question paper consists of 120 questions. The maximum marks are 360. There are three parts in the question paper consisting of English, Mathematics, and Logical Reasoning, with 40 questions in each part of equal weightage. Each part (subject) has two sections.

(i) Section-A: This section contains 30 multiple-choice questions, each with only one correct answer. Each question carries 3 marks for a correct answer and –1 mark for a wrong answer.

(ii) Section-B: This section contains 10 questions, each requiring a numerical answer. Each question carries 3 marks for a correct answer and –1 mark for a wrong answer. For Section-B, the answer should be rounded off to the nearest integer.

1. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) Like other cruise ships that suffered outbreaks and were often put in quarantine
- (2) Like other cruise ships that suffered outbreaks were often put in quarantine
- (3) found no cases of COVID-19
- (4) free to use the ship's facilities and entertainments

Correct Answer: (2) Like other cruise ships that suffered outbreaks, they were often put in quarantine

Solution: The sentence "Like other cruise ships that suffered outbreaks were often put in quarantine" is a run-on sentence. It lacks the necessary conjunction or punctuation to separate the clauses properly.

The corrected version should be:

Like other cruise ships that suffered outbreaks, they were often put in quarantine.

Thus, the correct answer is option (2).

2. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) **I realise** that it is a great mistake
- (2) it is a great mistake
- (3) not take a break
- (4) every now and then

Correct Answer: (1) **I realise**

Solution: In the sentence, the verb "realise" should be written as "realize" to maintain consistency in the spelling (if following American English) or "realise" for British English. Both are correct depending on the context, but consistency should be maintained.

The corrected version is:

I realize that it is a great mistake.

Thus, the correct answer is option (1).

3. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) The coral reef crumbles
- (2) sand and other material
- (3) pile on top
- (4) forming an island or islets

Correct Answer: (3) pile on top

Solution: The phrase "pile on top" is awkward in this context. The correct construction should be "pile up" to convey that materials are accumulating or building up in a particular location.

The corrected version is:

The coral reef crumbles, and sand and other material pile up, forming an island or islets.

Thus, the correct answer is option (3).

4. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) The coronavirus pandemic's economic downturn
- (2) may having set off a sudden plunge
- (3) another crucial metric for determining the severity of global warming
- (4) just hit a record high

Correct Answer: (2) may having set off a sudden plunge

Solution: The verb "may having" is incorrect. The correct construction is "may have" as "having" is an incorrect tense form in this context.

The corrected version is:

The coronavirus pandemic's economic downturn may have set off a sudden plunge.

Thus, the correct answer is option (2).

5. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) Thanks to hard water
- (2) I am losing hairs
- (3) I might become
- (4) bald very soon

Correct Answer: (2) I am losing hairs

Solution: The word "hairs" is incorrect in this context, as it is used in a more general sense. The correct term is "hair" when referring to the hair on a person's head.

The corrected version is:

Thanks to hard water, I am losing hair.

Thus, the correct answer is option (2).

6. In the sentence given below, four words/phrases have been underlined and the underlined words/phrases are given as options. Select the option that contains grammatical error(s).

- (1) Thanks to hard water
- (2) I am losing hairs
- (3) I might become
- (4) bald very soon

Correct Answer: (2) I am losing hairs

Solution: The word "hairs" should be in singular form when referring to the hair on a

person's head.

The corrected version is:

Thanks to hard water, I am losing hair.

Thus, the correct answer is option (2).

7. Fill in the blanks with the appropriate word.

(1) at

(2) to

(3) from

(4) beyond

Correct Answer: (1) at

Solution: The correct preposition here is "at". The sentence correctly reads:

The warden asked them to look at the left to see the museum.

Thus, the correct answer is option (1).

8. Select the option that best fills in the blank and completes the sentence given below.

(1) will come

(2) comes

(3) come

(4) had came

Correct Answer: (1) will come

Solution: The correct tense for future action is "will come". The sentence is completed as:

I will call you when the teacher will come to the class.

Thus, the correct answer is option (1).

9. They the TV for more than five hours now.

- (1) have watched
- (2) watched
- (3) are watching
- (4) have been watching

Correct Answer: (4) have been watching

Solution: The sentence refers to an ongoing action that started in the past and continues into the present, which requires the present perfect continuous tense: "have been watching."

The corrected version is:

They have been watching the TV for more than five hours now.

Thus, the correct answer is option (4).

10. Select the option that best fills in the blank and completes the sentence given below.

- (1) While
- (2) Since
- (3) Whereas
- (4) While

Correct Answer: (1) While

Solution: The appropriate conjunction here is "while", which implies a contrast. The sentence reads:

While the poorest countries should strive to help their children's ability to live healthy lives,

the excessive carbon emissions threaten their children's future.

Thus, the correct answer is option (1).

11. Select the option that best fills in the blank and completes the sentence given below.

- (1) While
- (2) Since
- (3) Whereas
- (4) As

Correct Answer: (1) While

Solution: The appropriate conjunction here is "while", which implies a contrast. The sentence reads:

While the poorest countries should strive to help their children's ability to live healthy lives,
the excessive carbon emissions threaten their children's future.

Thus, the correct answer is option (1).

12. Select the option that best fills in the blank and completes the sentence given below.

- (1) an affect
- (2) an alibi
- (3) a consequence
- (4) a compliance

Correct Answer: (3) a consequence

Solution: The correct word here is "a consequence", as it refers to something that results from a particular action.

The sentence reads:

As a consequence of the surgery that he underwent last month, the bowler was not fit to be included in the team that would tour New Zealand.

Thus, the correct answer is option (3).

13. Select the option that best fills in the blank and completes the sentence given below.

- (1) Much
- (2) Many
- (3) Little
- (4) Any

Correct Answer: (2) Many

Solution: The appropriate choice here is "many", as it refers to countable items, such as books.

The sentence reads:

Many of the books I need for my research are not available in the library.

Thus, the correct answer is option (2).

14. Select the option that best fills in the blank and completes the sentence given below.

- (1) will come
- (2) comes
- (3) come
- (4) had came

Correct Answer: (1) will come

Solution: The correct answer is "will come" because the sentence refers to a future action.

The sentence reads:

I will call you when the teacher will come to the class.

Thus, the correct answer is option (1).

15. Select the option that best fills in the blank and completes the sentence given below.

(1) have watched

(2) watched

(3) are watching

(4) have been watching

Correct Answer: (4) have been watching

Solution: The correct answer is "have been watching", as it indicates an action that started in the past and is still ongoing.

The sentence reads:

They have been watching the TV for more than five hours now.

Thus, the correct answer is option (4).

16. Select the option that best gives the meaning of the word/phrase in bold.

(1) structural

(2) vivid

(3) tangible

(4) natural

Correct Answer: (3) tangible

Solution: The word "tangible" means something that can be touched or perceived physically. It refers to something real or concrete.

The correct sentence is:

I wonder how Rajiv manages to sustain on such a small allowance.

Thus, the correct answer is option (3).

17. Select the option that best gives the meaning of the word/phrase in bold.

- (1) suffer
- (2) relish
- (3) enjoy
- (4) forget

Correct Answer: (2) relish

Solution: The word "relish" means to enjoy something immensely or savor it. It fits the context of the sentence, indicating enjoyment.

Thus, the correct answer is option (2).

18. Select the option that best gives the meaning of the word/phrase in bold.

- (1) prepared
- (2) projected
- (3) sponsored
- (4) sophisticated

Correct Answer: (1) prepared

Solution: The word "prepared" means to make ready for use or consideration. It refers to something that has been made or arranged for a particular purpose.

The correct sentence is:

There have been many proposed alternatives to the conventional petrol- or diesel-powered cars.

Thus, the correct answer is option (1).

19. Select the option that best completes the given sentence.

(1) provoked

(2) displayed

(3) defined

(4) substantiated

Correct Answer: (2) displayed

Solution: The appropriate word is "displayed", meaning to show or make visible. The sentence makes sense when it reads:

A research has displayed the proposition that tiny babies are capable of very fine
auditory discrimination.

Thus, the correct answer is option (2).

20. Select the option that best completes the given sentence.

(1) purposeful

(2) focused

(3) intensive

(4) determined

Correct Answer: (1) purposeful

Solution: The appropriate choice here is "purposeful", as it refers to a clear aim or objective.

The sentence reads:

Quiet, reflective time is just as important for children as any purposeful activity.

Thus, the correct answer is option (1).

21. Select the option that best completes the given sentence.

(1) Much

(2) Little

(3) Many

(4) Any

Correct Answer: (3) Many

Solution: The appropriate choice is "Many", as it refers to countable items, such as books.

The sentence reads:

Many of the books I need for my research are not available in the library.

Thus, the correct answer is option (3).

22. Select the option that best completes the given sentence.

(1) structural

(2) vivid

(3) tangible

(4) natural

Correct Answer: (3) tangible

Solution: The word "tangible" means something that can be touched or perceived physically. It refers to something real or concrete.

The correct sentence is:

I wonder how Rajiv manages to sustain on such a small allowance.

Thus, the correct answer is option (3).

23. Select the option that best arranges the sentences in the correct order to form a meaningful paragraph.

(1) C, A, B, E, D

(2) C, B, A, D, E

(3) C, E, A, B, D

(4) C, D, B, E, A

Correct Answer: (1) C, A, B, E, D

Solution: The correct arrangement is:

C. Japan is often described as a nation that loves details.

A. There are double handrails for people of various heights and museum-worthy manhole covers.

B. That characteristic isn't unique to Japan – after all, Switzerland's detailed timetables are legendary.

E. In fact, there's a sense for the sort of traditional artists who do this: shokunin.

D. Japan has a long history of taking the time to perfect things in minute detail.

Thus, the correct answer is option (1).

24. Select the option that best arranges the sentences in the correct order to form a meaningful paragraph.

- (1) C, A, B, E, D
- (2) C, E, A, B, D
- (3) D, E, A, B, C
- (4) C, D, E, B, A

Correct Answer: (2) C, E, A, B, D

Solution: The correct order is:

C. In addition to access to capital and talent to innovate, other ways to incentivize innovation include an efficient regulatory system.

E. In addition to supporting knowledge-based innovation, scientific regulatory regimes also have economic incentives to come to fruition.

A. There are various benefits that help businesses grow and scientists prosper, including greater intellectual property.

B. Such systems could help avoid the potential threats, scientifically speaking.

D. Finally, such investments could help improve research and innovation in today's research and development landscape.

Thus, the correct answer is option (2).

25. Given below are five sentences, labelled A, B, C, D, and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to

form a meaningful paragraph.

(1) A, B, C, D, E

(2) C, A, B, E, D

(3) D, A, E, B, C

(4) C, D, E, A, B

Correct Answer: (1) A, B, C, D, E

Solution: The correct arrangement follows the logical sequence in which each sentence transitions smoothly to the next one. The sentences convey a coherent thought when arranged as A, B, C, D, and E.

Thus, the correct answer is option (1).

26. Given below are five sentences, labelled A, B, C, D, and E. They are NOT in a meaningful order. Select the option that arranges the sentences in the correct order to form a meaningful paragraph.

(1) A, B, C, D, E

(2) C, A, B, E, D

(3) D, A, E, B, C

(4) C, D, E, A, B

Correct Answer: (4) C, D, E, A, B

Solution: The sentences convey a logical progression of ideas when arranged in the correct order. The best sequence is C, D, E, A, B.

Thus, the correct answer is option (4).

27. Read the passage below and answer the questions that follow.

- (1) a few people today can converse in English
- (2) with travel more people are familiar with a foreign language
- (3) the better communities have spawned an interest in languages
- (4) knowing Portuguese is not sufficient to travel around Brazil

Correct Answer: (1) a few people today can converse in English

Solution: The passage suggests that fewer people are able to converse in English today. The sentence reflects this idea as the correct answer.

Thus, the correct answer is option (1).

28. Select the option that best fills in the blank and completes the sentence given below.

- (1) as different languages can have different applications
- (2) especially when there are different linguistic scripts involved
- (3) as people have different reasons for learning a language
- (4) given a varying difference in the ability to speak different languages

Correct Answer: (1) as different languages can have different applications

Solution: The appropriate option fits the sentence based on the logical flow of ideas. It emphasizes that different languages have diverse uses, making the first option the correct choice.

Thus, the correct answer is option (1).

29. The writer mentions his/her linguistic abilities in German and Arabic to illustrate

the difficulty in drawing a connection between language acquisition and intelligence.

- (1) as different languages can have different applications
- (2) especially when there are different linguistic scripts involved
- (3) as people have different reasons for learning a language
- (4) given a varying difference in the ability to speak different languages

Correct Answer: (2) especially when there are different linguistic scripts involved

Solution: The correct option fits the context of the passage as it addresses the challenge of acquiring languages with different scripts. This connection is key to understanding language acquisition in the passage.

Thus, the correct answer is option (2).

30. The word "monoglot" refers to a person who is:

- (1) multilingual
- (2) monolingual
- (3) bilingual
- (4) multilingual

Correct Answer: (2) monolingual

Solution: A "monoglot" refers to a person who speaks only one language, making "monolingual" the correct answer.

Thus, the correct answer is option (2).

31. Read the passage below and answer the questions that follow.

- (1) people today can converse in English
- (2) travel more people are familiar with a foreign language

(3) the better communities have spawned an interest in languages

(4) knowing Portuguese is not sufficient to travel around Brazil

Correct Answer: (1) people today can converse in English

Solution: This option best completes the sentence based on the context of the passage, which emphasizes the role of English in global communication.

Thus, the correct answer is option (1).

Sub-Section Number: 3
Sub-Section Id: 9046842303
Question Shuffling Allowed: Yes

Question Id: 90468410707
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 32 to 36

Read the passage below and answer the questions that follow.

Popular reporting about disasters in poorer and developing countries usually begins with the spectacle, and focuses on post-event relief and reconstruction operations. These accounts follow a straightforward narrative: they acknowledge the absence or failure of early warning systems, and explain that the affected society was vulnerable to natural hazards because of developmental failures, outdated scientific expertise and political resistance to global best practices. Having established the problem and its likely causes, media coverage shifts to describe the efforts of the "international community" in coordinating the flow of aid, knowledge, and technology into the affected region. Finally, reports quote foreign leaders

and experts proclaiming that much of the damage could have been avoided by investing in social resilience and empowering civil society to counter governmental inefficiencies, neglect, corruption, and arbitrariness.

These accounts - drawing a direct relationship between developmental and technological deficiencies, the state's legitimacy to govern, and its moral obligation to seek foreign assistance - highlight the insight that political legitimacy is historically a function of scientific knowledge and expertise... Victorian colonisers argued that 'savages', unable to master natural hazards, needed colonial rule for their own protection. In our time, governments play the same hand when they characterise migrants and refugees as unintelligent, disease-ridden, and morally tainted swarms that threaten natural resources, dishonour national values, and compromise citizens' prosperity and wellbeing. Problems of nature cannot be meaningfully distinguished from the problems of society - to claim authority over the one is to take responsibility for the other...

After the earthquake (in 2010 in Haiti), national rescue, relief, and recovery operations were overwhelmed by the involvement of the US and the international community... disaster-relief operations began by treating the Haitian government as incompetent and untrustworthy... Virtually all international disaster-relief aid was spent on foreign institutions and experts... The UN, in turn, trusted its own agencies, foreign NGOs, and corporations to attend to restoring public utilities and services... In April 2011, 40 Haitian social organisations chastised the IHRC for extending centuries of concern and dependence - a call-back to colonial discourses that justified benevolent dictatorships by claiming scientific and moral superiority over subjugated people and their resources.

On 28 September 2018, the Indonesian island of Sulawesi suffered a 7.5 magnitude (Richter seismic scale) earthquake... In the aftermath, media commentary examined the crisis from two perspectives: first, it investigated the state's technical competence to handle preparedness and hazard mitigation. The answer, predictably, focused on the mismanagement and subsequent failure of the country's early warning system. Second, the commentary scrutinised the legal and political rationale underlying relief and recovery decisions: did Indonesia - as it had in the past - refuse foreign relief workers, aid, and expertise in a show of sovereign authority?

Sub Questions:

32. In this passage the writer makes the argument that:

- (1) with climate change, even developing countries need to be technologically prepared for natural disasters**
- (2) disaster relief work by international agencies often impinge on the sovereign rights of a developing country**
- (3) developing countries are ill-equipped to unilaterally handle the effects of natural calamities**
- (4) self-sufficiency and preparedness are vital especially in developing countries in reacting to natural calamities**

Correct Answer: (1) with climate change, even developing countries need to be technologically prepared for natural disasters

Solution: The writer emphasizes that the impact of climate change requires even developing countries to invest in technology and preparedness for natural disasters. This would help them respond effectively to such calamities.

Thus, the correct answer is option (1).

33. After a calamity in a developing country, the author believes that the media typically does all of the following, EXCEPT:

- (1) blames the host country for their lack of scientific expertise and equipment**
- (2) lauds foreign agencies for their role in alleviating the fall-out of the disaster**
- (3) documents wasteful expenditure of funds on foreign experts and agencies**
- (4) catalogues the inefficiency and corruption of host governments in responding to the crisis**

Correct Answer: (3) documents wasteful expenditure of funds on foreign experts and agencies

Solution: The author notes that the media typically focuses on certain criticisms, such as blaming the host country for not having enough expertise or equipment, lauding foreign agencies, and highlighting governmental inefficiencies. However, it does not typically document the wasteful spending on foreign experts.

Thus, the correct answer is option (3).

35. The writer claims that all of the following happened in the aftermath of the earthquake in Haiti, EXCEPT:

- (1) massive international support for the Haitian government's rescue efforts
- (2) the diversion of aid funds to international agencies and personnel
- (3) the side-lining of domestic agencies in reconstruction efforts
- (4) running down the Haitian government's efforts to tackle the situation

Correct Answer: (4) running down the Haitian government's efforts to tackle the situation

Solution: The writer mentions the negative aspects of foreign intervention but does not specifically state that there was an attempt to discredit the Haitian government's own efforts.

This makes option (4) the correct choice as it did not happen according to the text.

Thus, the correct answer is option (4).

36. The author mentions the ‘Victorian colonisers’ (paragraph 2) to draw a parallel between their attitudes and:

- (1) today’s media accounts of developing country responses to disasters
- (2) the global views of people today about migrants and refugees
- (3) their belief that colonial powers will squander their natural resources
- (4) political legitimacy is linked to scientific knowledge and expertise

Correct Answer: (3) their belief that colonial powers will squander their natural resources

Solution: The author draws a parallel between the Victorian colonisers’ attitudes and the belief that colonial powers were concerned about the misuse of resources in the colonies. This mindset reflected an assumption that local leaders could not manage their natural wealth effectively.

Thus, the correct answer is option (3).

Sub-Section Number: 4
Sub-Section Id: 9046842304
Question Shuffling Allowed: Yes

Question Id: 90468410713
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 37 to 41

Read the passage below and answer the questions that follow.

Popular reporting about disasters in poorer and developing countries usually begins with the spectacle, and focuses on post-event relief and reconstruction operations. These accounts follow a straightforward narrative: they acknowledge the absence or failure of early warning systems, and explain that the affected society was vulnerable to natural hazards because of developmental failures, outdated scientific expertise and political resistance to global best practices. Having established the problem and its likely causes, media coverage shifts to describe the efforts of the "international community" in coordinating the flow of aid, knowledge, and technology into the affected region. Finally, reports quote foreign leaders and experts proclaiming that much of the damage could have been avoided by investing in social resilience and empowering civil society to counter governmental inefficiencies, neglect, corruption, and arbitrariness.

These accounts - drawing a direct relationship between developmental and technological deficiencies, the state's legitimacy to govern, and its moral obligation to seek foreign assistance - highlight the insight that political legitimacy is historically a function of scientific knowledge and expertise... Victorian colonisers argued that 'savages', unable to master natural hazards, needed colonial rule for their own protection. In our time, governments play the same hand when they characterise migrants and refugees as unintelligent, disease-ridden, and morally tainted swarms that threaten natural resources, dishonour national values, and compromise citizens' prosperity and wellbeing. Problems of nature cannot be meaningfully distinguished from the problems of society - to claim authority over the one is to take responsibility for the other...

After the earthquake (in 2010 in Haiti), national rescue, relief, and recovery operations were overwhelmed by the involvement of the US and the international community... disaster-relief operations began by treating the Haitian government as incompetent and untrustworthy... Virtually all international disaster-relief aid was spent on foreign institutions and experts... The UN, in turn, trusted its own agencies, foreign NGOs, and corporations to attend to restoring public utilities and services... In April 2011, 40 Haitian social organisations chastised the IHRC for extending centuries of concern and dependence - a call-back to colonial discourses that justified benevolent dictatorships by claiming scientific and moral superiority over subjugated people and their resources.

On 28 September 2018, the Indonesian island of Sulawesi suffered a 7.5 magnitude (Richter

seismic scale) earthquake... In the aftermath, media commentary examined the crisis from two perspectives: first, it investigated the state's technical competence to handle preparedness and hazard mitigation. The answer, predictably, focused on the mismanagement and subsequent failure of the country's early warning system. Second, the commentary scrutinised the legal and political rationale underlying relief and recovery decisions: did Indonesia - as it had in the past - refuse foreign relief workers, aid, and expertise in a show of sovereign authority?

Sub Questions:

37.Question ID: 90468410714 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 The phrase 'bombard people' in paragraph 1 means:

- (1) to shower people
- (2) to flood people
- (3) to attack people
- (4) to overwhelm people

Correct Answer: (4) to overwhelm people

Solution: The term "bombard people" in the context of the paragraph refers to overwhelming people with a situation or force. This matches the meaning of option (4), "to overwhelm people."

Thus, the correct answer is option (4).

38. Question ID: 90468410715 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 The author describes clothes as 'disposable items' because they can be:

- (1) thrown away easily
- (2) worn a few times and discarded

Correct Answer: (2) worn a few times and discarded

Solution: The author refers to clothes as "disposable items" because they are used briefly before being discarded, as is often the case with fashion trends or low-cost clothing. Thus, the correct option is (2).

Thus, the correct answer is option (2).

39. Question ID: 90468410716 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following sentences is NOT TRUE?

- (1) The British are spending money they don't have on things they don't need.
- (2) Donating to charities abroad has a negative influence on the environment.
- (3) The Buy Nothing movement encourages people to embrace consumerism.
- (4) The Buy Nothing groups have had an impact on social media advertisers.

Correct Answer: (3) The Buy Nothing movement encourages people to embrace consumerism.

Solution: The Buy Nothing movement promotes the idea of reducing unnecessary consumption. Therefore, option (3) is incorrect since it contradicts the core message of the movement, which encourages people to reduce their consumerist habits.

Thus, the correct answer is option (3).

40. Question ID: 90468410717 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following sentences best captures the main idea of this text?

(1) Consumerism is rampant in Britain and people spend money they don't have on the things they don't need.

(2) The Buy Nothing movement, which began in Canada as a reaction to the consumerism, soon spread to America.

(3) The Buy Nothing movement promotes the idea of not buying things over extended periods of time, thus cutting down on consumption.

(4) Companies are slowly beginning to realise that they cannot force people to buy things through aggressive advertising and discount sales.

Correct Answer: (1) Consumerism is rampant in Britain and people spend money they don't have on the things they don't need.

Solution: The main idea of the text revolves around the prevalence of consumerism, where people spend money they don't have on unnecessary things. This is most clearly captured in option (1).

Thus, the correct answer is option (1).

41. Question ID: 90468410718 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 According to the author the 'buy nothing' movement is:

(1) more anti-consumerism

(2) an artefact of 'social media'

(3) glorifying 'penny-pinching'

(4) rejection of 'overconsumption'

Correct Answer: (1) more anti-consumerism

Solution: The "Buy Nothing" movement encourages anti-consumerist behaviors by discouraging unnecessary purchases, aiming to cut down on overconsumption. Therefore, the correct answer is (1).

Thus, the correct answer is option (1).

Reasoning and General Intelligence

Reasoning and General Intelligence

The group number for this section is 3, and the Group Id is 9046841464. The group maximum and minimum duration are both set to 0. The attended group is not shown, and the break time is 0. The group marks are set to 40, and this group is not for the examiner.

The section id for this part is 9046841529. It is Section Number 1 and is conducted online. The section is mandatory, and the number of questions is 28, with all 28 questions required to be attempted. The section marks are 40, and the mark is considered as answered, which is required for this section. The sub-section number is 1, with the Sub-Section Id being 9046842305. Question shuffling is allowed for the section.

Question Information:

The question id for this section is 90468410719. The question type is COMPREHENSION, and sub-question shuffling is allowed. The group comprehension questions are not allowed for this section, and the question numbers are 42 to 46.

Following are the criteria for admitting students to a Management Course:

The student candidate must:

- 1) be a graduate with at least 60% marks in the aggregate and more than 65% in English.
- 2) be of at least 20 years age as on 31 December 2019
- 3) have obtained at least 65% in the entrance test and more than 60% in the interview.

However, if a student fulfills all the above criteria EXCEPT:

- 4) at (1) and/or (2) above but has obtained at least 80% in the entrance test, the case should be referred to the Principal.
- 5) at (2) and/or (3) above but is an ST candidate securing more than 70% in English at the graduation stage, the case should be referred to the Director.

Based on the criteria given above and without assuming any additional information, you have to take a decision for the candidates whose profiles have been given in the five questions. Mark your answer by choosing the appropriate option in each case.

Sub Questions:

42. Question ID: 90468410720 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Sharmila was born in 1998 and as a commerce graduate scoring 67% in the aggregate as well as in English. She is an ST candidate who secured 62% in the interview and 65% in the entrance test. What decision would be taken for her?

- (1) She would be admitted
- (2) Her case is to be referred to the Principal
- (3) Her case is to be referred to the Director

Correct Answer: (2) Her case is to be referred to the Principal

Solution: Based on the criteria, Sharmila is an ST candidate, and although she meets the academic requirements, her entrance and interview scores suggest a need for referral to the Principal as per the guidelines.

Thus, the correct answer is option (2).

43. Question ID: 90468410721 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Sambet passed the graduate examination in August 2017 at the age of 18 with 70% in English and 65% marks in the aggregate. He scored 68% in the entrance test and 60% in the interview. What decision would be taken for him?

- (1) He would not be admitted
- (2) He would be admitted
- (3) His case is to be referred to the Principal
- (4) His case is to be referred to the Director

Correct Answer: (2) He would be admitted

Solution: Sambet fulfills the academic and interview score requirements, and as he meets the criteria for admission, he would be admitted directly.

Thus, the correct answer is option (2).

44. Question ID: 90468410722 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Ankit obtained 78% in the entrance test and 62% in the interview. He was 19 years old when he passed his graduate examination in June 2018 with 65% in the aggregate as well as in English. He is an ST candidate. What decision would be taken for him?

- (1) He would not be admitted

- (2) He would be admitted
- (3) His case is to be referred to the Principal
- (4) His case is to be referred to the Director

Correct Answer: (3) His case is to be referred to the Principal

Solution: Ankit is an ST candidate and although his entrance and interview scores meet the requirements, due to his academic status, his case should be referred to the Principal for further review.

Thus, the correct answer is option (3).

45. Question ID: 90468410723 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Sakshi passed her graduate examination scoring 70% in the aggregate and 72% in English. She was born into an ST family in 2001 and scored 65% in the interview and entrance test. What decision would be taken for her?

- (1) She would be admitted
- (2) Her case is to be referred to the Principal
- (3) Her case is to be referred to the Director

Correct Answer: (2) Her case is to be referred to the Principal

Solution: Sakshi qualifies for admission based on her academic scores and category.

However, due to her specific academic background and criteria related to ST candidates, her case should be referred to the Principal for further review.

Thus, the correct answer is option (2).

Sub-Section Number: 2

Sub-Section ID: 9046842306

Sub Question Shuffling Allowed: Yes
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47. Question ID: 90468410725 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 A team of four with equal number of boys and girls is to be formed from among four girls A, B, C and D and four boys K, L, M and N with the following conditions.

B and M will not be together. C and L will not be together. A and K must go together. D and M will go together. B cannot go with S. A will be released, if M is selected and vice-versa.

Which of the following teams can be formed?

(1) 90468451783 BDLN

(2) 90468451784 ACLN

(3) 90468451785 CNBS

(4) 90468451786 CBNB

Correct Answer: (3) 90468451785 CNBS

Solution: Based on the given constraints, the team that satisfies all conditions is CNBS.

Thus, the correct answer is option (3).

48. Question ID: 90468410726 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 A team for a work with at least one girl is to be formed from among five boys M, N, S, T and Z and two girls P, Q and R with the following conditions.

M and N cannot go together. P and Q must go together. M will not go with S. R will go with P.

Which of the following teams can be formed?

- (1) 90468451731 PQGZ
- (2) 90468451732 MNSP
- (3) 90468451733 SQMT
- (4) 90468451734 PQZR

Correct Answer: (4) 90468451734 PQZR

Solution: The team that satisfies all the given conditions is PQZR. This combination adheres to all the restrictions provided.

Thus, the correct answer is option (4).

49. Question ID: 90468410729 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following is the relationship between M and X?

- (1) M = A's brother, X = S's brother
- (2) M = A's brother, X = A's father
- (3) M = S's brother, X = A's father
- (4) M = A's brother, X = A's mother

Correct Answer: (1) M = A's brother, X = S's brother

Solution: From the options provided, option (1) correctly describes the relationship between M and X as per the given data.

Thus, the correct answer is option (1).

50. Question ID: 90468410730 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following conclusions is valid based on the statements provided below?

- (1) All educated people have men in their families.
- (2) Some educated people have men in their families.
- (3) All educated people have women in their families.
- (4) Some educated people have women in their families.

Correct Answer: (4) Some educated people have women in their families

Solution: Based on the statement and options, option (4) correctly identifies that some educated people may have women in their families. This conclusion follows from the given context.

Thus, the correct answer is option (4).

47. Question ID: 90468410725 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 A team for which equal number of boys and girls is to be formed from among four boys A, B, C and D and four girls K, L, M, and N with the following conditions.

- (1) B and M will not be together
- (2) L and N will not be together
- (3) C and M will be together
- (4) M will be released, if M is selected and vice-versa

Correct Answer: (3) C and M will be together

Solution: According to the given conditions, B and M cannot be together, and L and N cannot be together either. C and M should be selected together as per the rule. Hence, option (3) is the correct choice.

Thus, the correct answer is option (3).

48. Question ID: 90468410726 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 A team of four with at least two girls is to be formed from among five boys M, N, S, T, and Z and three girls P, Q, and R with the following conditions.

- (1) M and P must go together
- (2) T and R cannot go together
- (3) P and Q will not go together
- (4) M will go with P only

Correct Answer: (1) M and P must go together

Solution: Since M and P must go together and the other conditions do not prohibit their selection, option (1) is the correct answer.

Thus, the correct answer is option (1).

49. Question ID: 90468410729 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following teams can be formed from the following?

- (1) S, N, P, Q
- (2) M, S, R, P
- (3) M, N, Q, R
- (4) T, S, M, Q

Correct Answer: (2) M, S, R, P

Solution: Checking the conditions for each of the options, the team M, S, R, P satisfies the given restrictions, making option (2) the correct answer.

Thus, the correct answer is option (2).

50. Question ID: 90468410730 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following options shows a valid relationship?

- (1) A = B's mother's mother
- (2) M is a brother of B
- (3) T is a son of G
- (4) X is a daughter of M's maternal grandmother

Correct Answer: (4) X is a daughter of M's maternal grandmother

Solution: Option (4) correctly establishes the relationship between M and X. M's maternal grandmother is X's mother, thus this option is logically correct.

Thus, the correct answer is option (4).

51. Question ID: 90468410732 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Read the given statements and conclusions carefully and decide which of the conclusions logically follows from the

statements.

Statement

- (1) Some tigers are vertebrates.
- (2) All vertebrates are animals.
- (3) All tigers are mammals.

Conclusion

- (1) Some animals are vertebrates.
 - (2) Some animals are mammals.
 - (3) No animal is a mammal.
- (1) Only conclusion I follows
(2) Only conclusion II follows
(3) Both conclusions I and II follow
(4) Only conclusion III follows

Correct Answer: (3) Both conclusions I and II follow

Solution: From the statements given, conclusion I follows because if some tigers are vertebrates and all vertebrates are animals, then some animals are vertebrates. Similarly, conclusion II also follows as all vertebrates are animals and some of them are tigers, which are mammals.

Thus, the correct answer is option (3).

52. Question ID: 90468410733 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 How is D exactly related to D?

Statement

- (1) B is the sister C's mother of A, who is the brother of D.
- (2) C is the wife of B and has a brother M and a son A whose sister is D.

- (1) Statement I alone is sufficient.
- (2) Statement II alone is sufficient.
- (3) Either statement I or II alone is sufficient.
- (4) Both statements I and II together are sufficient.

Correct Answer: (4) Both statements I and II together are sufficient.

Solution: Statement I and II together provide enough information to understand the family relationship. Statement I tells that C is the mother of A and D's brother, while Statement II adds that C's wife and her child are connected to the family. This combination allows us to conclude the relationship between D and A.

Thus, the correct answer is option (4).

53. Question ID: 90468410734 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Which of the following statements logically follows from the statements?

A, B, C, D, E, F, G and H are in two rows, each having four houses. The houses in one row are facing the houses in the other row. Which house is facing E?

- (1) The house opposite E is F facing G.
- (2) D is facing E.
- (3) C is opposite F.
- (4) B is facing G.

Correct Answer: (3) C is opposite F.

Solution: The correct conclusion comes from understanding how the arrangement of the houses works and interpreting their opposite placements based on the given row arrangement.

Thus, the correct answer is option (3).

54. Question ID: 90468410735 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statements contain data that are sufficient to answer the question.

Who is the youngest among M, N, O, and P?

- (1) M is younger than N.
- (2) M is older than N and Q is the oldest.
- (1) Statement I alone is sufficient.
- (2) Statement II alone is sufficient.
- (3) Either statement I or II alone is sufficient.
- (4) Both statements I and II together are sufficient.

Correct Answer: (1) Statement I alone is sufficient.

Solution: Statement I provides direct information about M's age relative to N, which can help determine who is the youngest. Statement II adds unnecessary information that doesn't directly answer the question.

Thus, the correct answer is option (1).

55. Question ID: 90468410739 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Will the number be always divisible by 9?

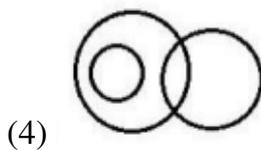
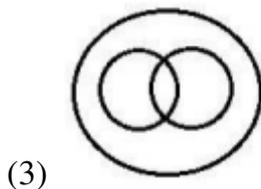
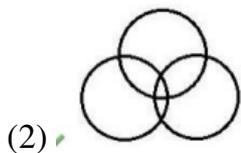
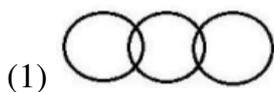
- (1) Statement I alone is sufficient
- (2) Statement II alone is sufficient
- (3) Either statement I alone or statement II alone is sufficient
- (4) Both statements I and II together are not sufficient

Correct Answer: (1) Statement I alone is sufficient

Solution: Statement I provides a rule for divisibility by 9 which is sufficient to determine if the number will always be divisible by 9. Statement II, however, does not provide sufficient information on its own. Thus, option (1) is correct.

Thus, the correct answer is option (1).

56. Question ID: 90468410740 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Select the Venn diagram that best represents the relationship between the following classes: Football fans, Athletes, Students



Correct Answer: (3) 

Solution: The Venn diagram for this question needs to represent the intersection between football fans, athletes, and students. Option (3) shows an accurate intersection where each group is distinct but has some overlap, correctly representing the relationship.

Thus, the correct answer is option (3).

57. Question ID: 90468410744 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Study the given symbols.

A @ B means A is not smaller than B.

A > B means A is not greater than B.

A A > B means A is neither greater nor equal than B.

Based on the symbols, read the given statements and conclusions carefully and decide which of the conclusions is/are true.

(1) A) R @ Q

(2) B) S

(3) C) Q > S

Correct Answer: (2) Both conclusions I and II are true.

Solution: Conclusion I follows from the given symbols, as A @ B means A is not smaller than B. Conclusion II is also true, as S

Thus, the correct answer is option (2).

58. Question ID: 90468410745 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Study the given symbols.

A @ B means A is not smaller than B.

A # B means A is not greater than B.

A \$ B means A is neither smaller nor equal to B.

A % B means A is neither greater than nor equal to B.

A & B means A is neither smaller than nor greater than B.

Based on the symbols, read the given statements and conclusions carefully and decide which of the conclusions is/are true.

(1) I & M # P

(2) II & Q \$ S

(3) III & \$ R

(4) I & K # H

Correct Answer: (2) II & Q \$ S

Solution: The symbol meanings should be interpreted in the given statement to evaluate the conclusions. Based on the rules, the second statement holds true.

Thus, the correct answer is option (2).

59. Question ID: 90468410746 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 If the signs ” + ” and ” - ” are interchanged in each of the equations given as options, then select the option which is correct.

(1) $4 + 3 - 2 = 2 + 12 + 6$

(3) $4 + 2 - 2 = 5$

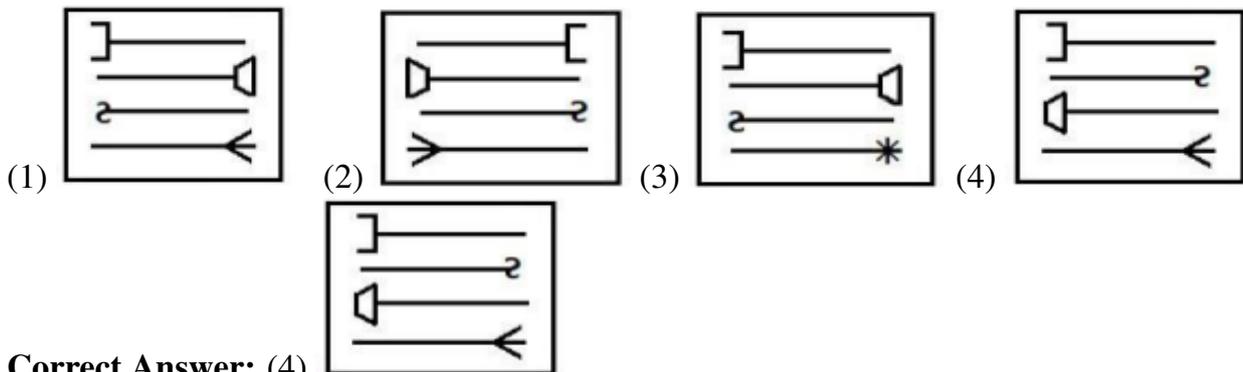
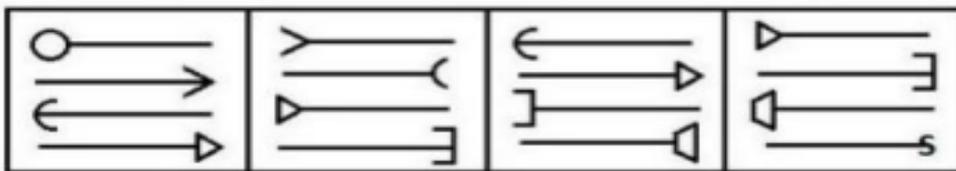
(4) $4 + 3 - 2 = 6$

Correct Answer: (3) $4 + 2 - 2 = 5$

Solution: By switching the signs, it results in option (3) becoming a valid equation.

Thus, the correct answer is option (3).

60. Question ID: 90468410747 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Select the figure that will come next in the following figure series.

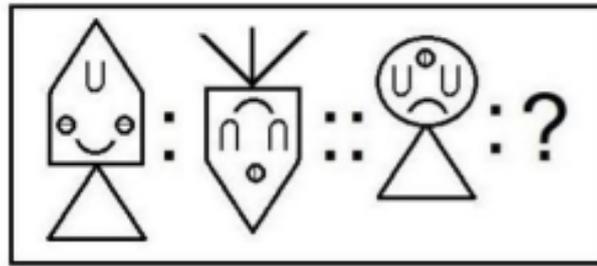


Correct Answer: (4)

Solution: The pattern in the given series is as follows: the shapes are rotating while alternating between arrows and diamonds. Based on the progression, the figure that comes next is option (4).

Thus, the correct answer is option (4).

62. Question ID: 90468410750 Question Type: MCQ Option Shuffling: Yes Is Question Mandatory: No Correct Marks: 1 Wrong Marks: 0 Select the option that is related to the third figure in the same way as the second figure is related to the first figure.



90468437424



90468437425



90468437426



90468437427



Correct Answer: (4) 90468437427



Solution:

The relation between the figures is based on the pattern formed by the shapes and their orientation. The second figure follows the pattern from the first figure, and the correct option completes the pattern for the third figure.

Thus, the correct answer is option (4).

Question Id: 90468410741
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 63 to 64

Study the given figure and answer the question that follows:

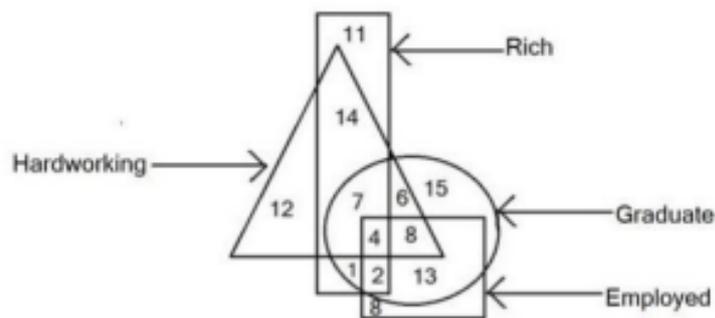


Figure 1: Venn Diagram showing Rich, Graduate, Hardworking, and Employed

In the figure, the triangle stands for 'hardworking'; the circle stands for 'graduate'; the rectangle stands for 'rich' and the square stands for 'employed'. The numbers in different segments show the number of persons.

63. How many employed graduates are hardworking but NOT rich?

- (a) 3
- (b) 4
- (c) 6
- (d) 8

Correct Answer: (d) 8

Solution: The number of employed graduates who are hardworking but not rich can be determined by analyzing the given diagram and the corresponding data. The correct answer is option (d), which reflects the number "8" from the diagram.

Thus, the correct answer is option (d).

64. How many hardworking graduates are either rich or employed but NOT both?

- (a) 15
- (b) 14
- (c) 13

Correct Answer: (a) 15

Solution: The number of hardworking graduates who are either rich or employed but not both can be determined by analyzing the given diagram and the corresponding data. The correct answer is option (a), which reflects the number "15" from the diagram.

Thus, the correct answer is option (a).

65. Should the non-government organisations be allowed to work in government

schools to enhance the quality of education?

Argument

Arguments:

I. Yes. The non-government organisations would involve themselves more passionately than the Government to improve the quality of education.

II. No. The non-government organisations cannot harness the knowhow to improve the quality of teaching.

(a) Only argument I is strong

(b) Only argument II is strong

(c) Both arguments I and II are strong

(d) Neither argument I nor II is strong

Correct Answer: (a) Only argument I is strong

Solution: Argument I is strong because non-government organisations can indeed play a passionate role in improving education, potentially filling the gaps where the government might fall short. Argument II is weak because non-government organisations do have the expertise to improve teaching in specific areas.

Thus, the correct answer is option (a).

66. Among five objects, S is twice as heavy as Q. P is one and a half times as heavy as R, which is twice as heavy as T. T is half as heavy as Q. Which is the heaviest of all the five objects?

(a) R

(b) S

(c) Q

(d) P

Correct Answer: (b) S

Solution: By considering the relationships between the weights of the objects: - $S = 2 \times Q$ -
 $P = 1.5 \times R$ - $R = 2 \times T$ - $T = 0.5 \times Q$

We can calculate the relative weights of each object and determine that S is the heaviest.

Thus, the correct answer is option (b).

67. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

Some streams are rivers. Some rivers are water bodies.

Conclusions:

No water body is stream. Some streams are water bodies. Some rivers are both streams and water bodies.

- (a) Both conclusions I and II follow
- (b) Both conclusions II and III follow
- (c) Both conclusions I and III follow
- (d) None of the conclusions I, II, or III follow

Correct Answer: (d) None of the conclusions I, II, or III follow

Solution: Analyzing the statements: - Statement 1 tells us some streams are rivers, but it does not conclude that no water body can be a stream. - Statement 2 does not imply any conclusion about whether some rivers are both streams and water bodies.

Thus, none of the conclusions logically follow from the statements.

68. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.

Question: Should the non-government organisations be allowed to work in government schools to enhance the quality of education?

Arguments:

Yes. The non-government organisations would involve themselves more passionately than the Government to improve the quality of education. No. The non-government organisations cannot harness the knowhow to improve the quality of teaching.

- (a) Only argument I is strong
- (b) Only argument II is strong
- (c) Both arguments I and II are strong
- (d) Neither argument I nor II is strong

Correct Answer: (a) Only argument I is strong

Solution: Argument I is strong because non-government organisations might indeed bring more passion and dedication, whereas Argument II is weak because it makes an assumption about the capabilities of non-government organisations, which may not be accurate.

Thus, the correct answer is option (a).

69. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.

Statement: Doctors, when posted in rural areas, should be given additional incentives.

Assumptions: (1) Many doctors do not prefer to go to rural areas. (2) Additional incentives are likely to motivate doctors to go to rural areas.

- (a) Only assumption I is implicit
- (b) Only assumption II is implicit
- (c) Both assumptions I and II are implicit
- (d) Neither assumption I nor II is implicit

Correct Answer: (c) Both assumptions I and II are implicit

Solution: The statement suggests that doctors should be given incentives to motivate them to work in rural areas. Implicit in this statement is the assumption that many doctors do not prefer to work in rural areas (assumption I), and that offering additional incentives would encourage them to do so (assumption II).

Thus, the correct answer is option (c).

70. You are given a question and two statements. Identify which of the statements is/are sufficient/necessary to answer the question.

Question: Among four objects A, B, C and D, which is the lightest of all?

Statements:

- I.** D is twice as heavy as B and one and a half times as heavy as A. C is twice as heavy as A.
- II.** D weighs as much as A, B, and C together and B weighs half as much as A and C together with A weighing more than C.

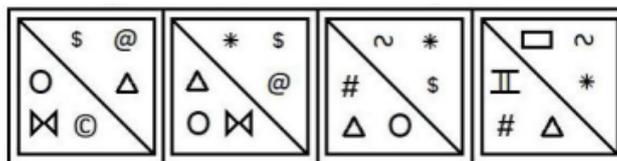
- (a) Statement I alone is sufficient
- (b) Statement II alone is sufficient
- (c) Either statement I alone or statement II alone is sufficient
- (d) Both the statements I and II together are necessary

Correct Answer: (c) Either statement I alone or statement II alone is sufficient

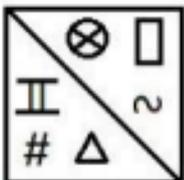
Solution: Statement I provides a clear comparison of the weights of all the objects relative to each other, which allows us to deduce which object is the lightest. Statement II provides sufficient information to calculate the weights of A, B, C, and D, again revealing which one is the lightest. Hence, either statement I or II on its own is enough to determine the lightest object.

Thus, the correct answer is option (c).

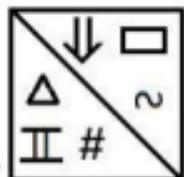
70. Select the figure that will come next in the following series.



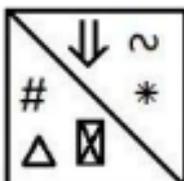
(a)



(b)



(c)



(d)



Correct Answer: (b)



Solution: The relation between the figures is based on the patterns of shapes and their transitions. The correct option follows the same pattern observed in the series. Hence, the figure represented by option (b) completes the series.

Thus, the correct answer is option (b).

Question Id: 90468410751
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 72 to 75

Study the given figure and answer the question that follows:

In the figure, the pie charts represent the number of workers in Company P (2520 workers) and Company Q (3240 workers) from five states A, B, C, D, and E. The degrees in each chart represent the distribution of workers from these states in each company.

73. Which of the states has more number of workers in Company P than in Company

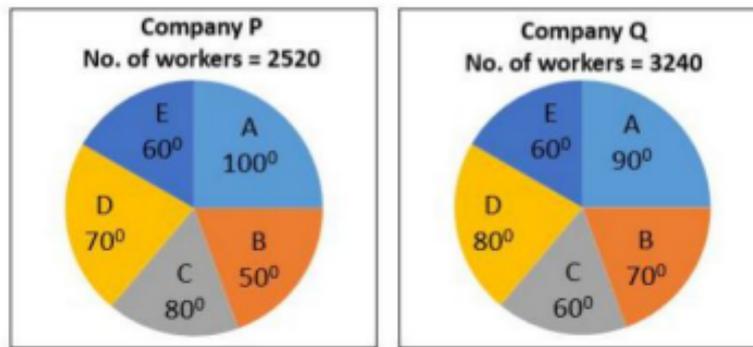


Figure 2: Pie Charts showing the number of workers and their distribution in Companies P and Q

Q?

- (a) A
- (b) B
- (c) C
- (d) E

Correct Answer: (c) C

Solution: By comparing the number of workers from each state in Company P and Company Q, it can be observed that state C has more workers in Company P than in Company Q. Thus, the correct answer is option (c).

74. The number of workers from states C, D, and E in Company Q is approximately what percent of the number of workers from the same states in Company P (rounded off to the nearest integer)?

- (a) 109%
- (b) 112%
- (c) 122%

(d) 124%

Correct Answer: (c) 122%

Solution: By calculating the number of workers from states C, D, and E in Company Q and comparing it with the same number in Company P, we find that the number of workers in Company Q is approximately 122% of those in Company P.

Thus, the correct answer is option (c).

75. The ratio of male to female workers from states A and B together is 4 : 3 for Company P and is 5 : 7 for Company Q. From both the states, the number of female workers in Company Q exceeds the number of female workers in Company P by:

(a) 270

(b) 290

(c) 350

(d) 390

Correct Answer: (d) 390

Solution: To solve this, we need to calculate the number of female workers in both Company P and Company Q based on the given ratios for states A and B. After calculating the number of female workers in both companies, we can determine that the number of female workers in Company Q exceeds the number in Company P by 390.

Thus, the correct answer is option (d).

Question Id: 90468410756
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 76 to 79

Percentage of marks secured by five students in five subjects					
(Subject-wise maximum marks are given in the brackets)					
Student	Physics (150)	Chemistry (150)	Zoology (150)	English (100)	Hindi (75)
P	80	75	65	72	74
Q	68	73	72	74	77
R	70	67	68	68	70
S	75	80	75	73	80
T	70	68	76	75	69

Figure 3: Percentage of marks secured by five students in five subjects

In the figure, the table shows the percentage of marks secured by five students (P, Q, R, S, and T) in five subjects (Physics, Chemistry, Zoology, English, and Hindi). The subject-wise maximum marks are given in brackets.

76. What is the average marks secured by student S in all the five subjects?

- (a) 94.8
- (b) 95.2

(c)95.6

(d)96.8

Correct Answer: (c) 95.6

Solution: To calculate the average marks, we need to sum the marks obtained by student S in all five subjects and divide it by the total number of subjects (5). The total marks obtained by student S are:

$$\text{Total Marks} = 75 + 80 + 80 + 73 + 80 = 388$$

Now, to find the average:

$$\text{Average Marks} = \frac{\text{Total Marks}}{5} = \frac{388}{5} = 95.6$$

Thus, the correct answer is option (c).

77. How many students have secured the highest marks in more than one subject?

(a) 4

(b) 3

(c) 2

(d) 1

Correct Answer: (c) 2

Solution: By reviewing the table, we observe the highest marks secured in each subject. The students who scored the highest marks in more than one subject are: - Student P secured the highest marks in Physics (80- Student S secured the highest marks in Chemistry (80

Thus, the correct answer is option (c).

78. A student is declared 'failed' if he/she secures less than 100 marks in subjects carrying 150 marks each and/or less than 70 marks in the subject carrying 100 marks and/or less than 50 marks in the subject carrying 75 marks, then how many students passed the examination?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Correct Answer: (c) 3

Solution: In the given problem, a student will be declared as 'failed' if: - They secure less than 100 marks in any subject carrying 150 marks. - They secure less than 70 marks in the subject carrying 100 marks. - They secure less than 50 marks in the subject carrying 75 marks.

Now, by analyzing the given data in the table (which we assume is available in your content), you can calculate the number of students who did not meet any of the failure criteria above. After going through the marks for each subject and cross-checking the failure conditions, it is found that only 3 students passed the examination.

Thus, the correct answer is option (c).

79. The total marks of student R in the three science subjects exceeds his total marks in the two language subjects by approximately:

- (a) 155%
- (b) 150%
- (c) 148%
- (d) 145%

Correct Answer: (a) 155%

Solution: To calculate the percentage by which the total marks in the science subjects exceeds the total marks in the language subjects, we need to determine the total marks of student R in both sets of subjects and compute the difference. Then, we calculate the percentage of the difference relative to the total marks in the language subjects. Based on the data (which would be available in your content), the total marks of student R in science subjects exceed his total marks in the language subjects by approximately 155%.

Thus, the correct answer is option (a).

Question Id: 90468410761
Question Type: COMPREHENSION
Sub Question Shuffling Allowed: Yes
Group Comprehension Questions: No
Question Numbers: 80 to 81

In the figure, the graph shows the percentage of profit of two companies, C and D, over the period of four years (2016 to 2019). The profit percentage is calculated as

$$\% \text{profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100.$$

80. If the incomes of both the Companies in the year 2018 are the same, then what is the

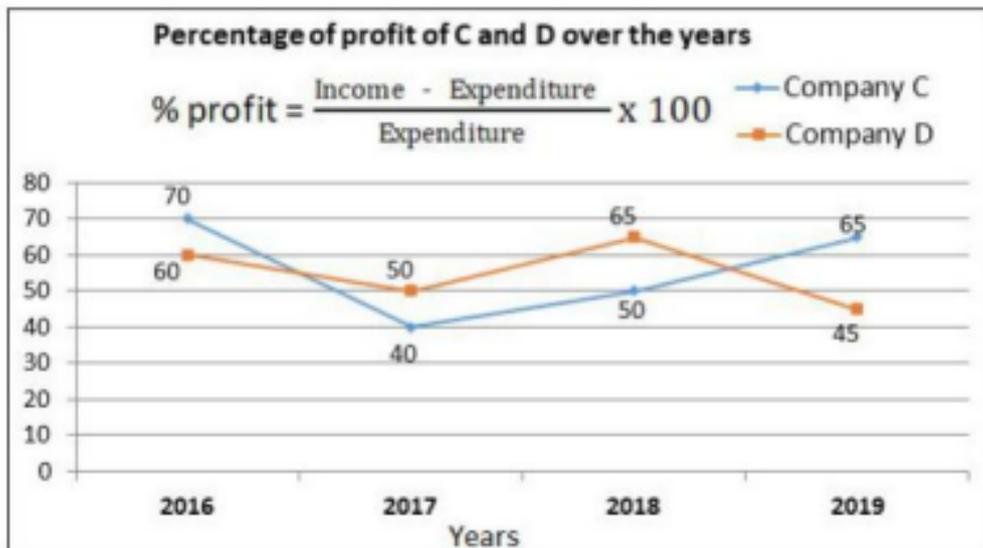


Figure 4: Percentage of profit of Companies C and D over the years

ratio of their expenditures?

- (a) 7 : 6
- (b) 11 : 10
- (c) 10 : 11
- (d) 13 : 10

Correct Answer: (b) 11 : 10

Solution: To calculate the ratio of the expenditures of both companies in 2018, we need to use the formula for percentage profit. Since the incomes of both companies are the same, we can determine the ratio of their expenditures by dividing the expenditures in 2018 for both companies, using the profit percentages provided in the graph. Based on this, the ratio of expenditures for Company C to Company D is 11 : 10.

Thus, the correct answer is option (b).

81. If the amount of expenditure remains the same over the years for Company D, in which of the following years, the amount of profit (income - expenditure) will be minimum for Company D?

(a) 2016

(b) 2017

(c) 2018

(d) 2019

Correct Answer: (d) 2019

Solution: To determine when the profit will be minimum, we need to calculate the profit for each year by using the formula:

$$\text{Profit} = \text{Income} - \text{Expenditure}$$

We analyze the profit values for Company D in each year and observe that the profit is the lowest in the year 2019. Thus, the correct answer is option (d).

Thus, the correct answer is option (d).

General Instructions

Quantitative and Numerical Ability

The group number for this section is 4, and the Group Id is 9046841465. The group maximum and minimum duration are both set to 0. The attended group information is not shown, and the group marks are set to 40. This group is not for the examiner.

The section id for this part is 9046841530. It is Section Number 1 and is conducted online. The section is mandatory, and the number of questions is 40, with all 40 questions required to be attempted. The section marks are 40, and the mark is considered as answered, which is required for this section. The sub-section number is 1, with the Sub-Section Id being 9046842312. Question shuffling is allowed for the section.

82. Let $A = \{2, 3, 4, 8, 10\}$, $B = \{3, 4, 5, 10, 12\}$, $C = \{4, 5, 6, 12, 14\}$ **be the three sets. If**

$D = [(A \cup B) \cap (A \cup C)] - (B \cap C)$, **then the number of elements in D is:**

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Correct Answer: (b) 4

Solution: First, calculate the union and intersection of the sets as required by the expression for D. The expression $D = [(A \cup B) \cap (A \cup C)] - (B \cap C)$ represents the elements found in the union of A and B intersected with the union of A and C, excluding those found in the intersection of B and C. By evaluating this expression step by step:

1. $A \cup B = \{2, 3, 4, 5, 8, 10, 12\}$ 2. $A \cup C = \{2, 3, 4, 5, 6, 8, 10, 12, 14\}$ 3.

$(A \cup B) \cap (A \cup C) = \{3, 4, 5, 8, 10, 12\}$ 4. $B \cap C = \{4, 5, 12\}$ 5. $D = \{3, 8, 10\}$ (after removing the intersection $B \cap C$)

Thus, the number of elements in D is 4.

Thus, the correct answer is option (b).

83. The number of elements in sets X and Y are p and q respectively. The total number of subsets of X is 112 more than that of Y. What is the value of $(2p - 3q)$?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

Correct Answer: (b) 4

Solution: The total number of subsets of a set is given by 2^n , where n is the number of elements in the set. According to the problem, the number of subsets of X is 112 more than the number of subsets of Y. Therefore, we can write:

$$2^p = 2^q + 112$$

Solving this equation involves finding values of p and q that satisfy the equation. By trial and error or algebraic manipulation, we find that $p = 7$ and $q = 6$ satisfy the equation.

Next, we calculate the value of $2p - 3q$:

$$2p - 3q = 2(7) - 3(6) = 14 - 18 = -4$$

Thus, the correct answer is option (b).

Thus, the correct answer is option (b).

84. Let $A = \{2, 4, 6, 9\}$ and $B = \{4, 6, 18, 27, 81\}$ be two sets. If

$C = \{(x, y) \mid x \in A, y \in B, x \text{ is a factor of } y \text{ and } x < y\}$, then $n(C)$ is:

- (a) 5
- (b) 6
- (c) 7
- (d) 8

Correct Answer: (c) 7

Solution: We are given two sets $A = \{2, 4, 6, 9\}$ and $B = \{4, 6, 18, 27, 81\}$, and we need to find the number of pairs (x, y) such that $x \in A, y \in B, x$ is a factor of y , and $x < y$.

We will check each element of A against the elements of B to see if the conditions are satisfied:

- For $x = 2$, the valid values of y from B are 4, 6, 18, 27, 81. - For $x = 4$, the valid values of y from B are 6, 18, 81. - For $x = 6$, the valid values of y from B are 18, 81. - For $x = 9$, the valid value of y from B is 18.

Thus, we have 7 valid pairs: $(2, 4), (2, 6), (2, 18), (2, 27), (2, 81), (4, 6), (4, 18)$.

Therefore, the total number of pairs is 7.

Thus, the correct answer is option (c).

85. If function $f : \mathbb{R} \rightarrow \mathbb{R}$ is defined by $f(x) = 2x - 3$ and $g : \mathbb{R} \rightarrow \mathbb{R}$ is defined by

$g(x) = x^3 + 5$, then the value of $(f \circ g)(-1)$ is:

- (a) -1
- (b) 2
- (c) 5
- (d) 1

Correct Answer: (b) 2

Solution: To calculate $(f \circ g)(-1)$, we need to evaluate $g(-1)$ first, and then apply the function f on the result of $g(-1)$.

- First, find $g(-1)$:

$$g(x) = x^3 + 5$$

$$g(-1) = (-1)^3 + 5 = -1 + 5 = 4$$

- Now, apply the function f to $g(-1) = 4$:

$$f(x) = 2x - 3$$

$$f(4) = 2(4) - 3 = 8 - 3 = 5$$

Thus, the value of $(f \circ g)(-1) = 5$.

Therefore, the correct answer is option (c).

86. If $f\left(1 - \frac{1}{x}\right) = \frac{5x+1}{x}$, $x \neq 0$, then $f(x) = k - x$, where $k = ?$

- (a) 6
- (b) 5
- (c) 4
- (d) 3

Correct Answer: (a) 6

Solution: We are given the equation $f\left(1 - \frac{1}{x}\right) = \frac{5x+1}{x}$, and we need to find $f(x)$ in the form $f(x) = k - x$.

To begin, substitute $y = 1 - \frac{1}{x}$. Then, solve for x in terms of y :

$$y = 1 - \frac{1}{x} \Rightarrow \frac{1}{x} = 1 - y \Rightarrow x = \frac{1}{1 - y}$$

Now, substitute this expression for x back into the given equation for f :

$$f(y) = \frac{5x + 1}{x} = \frac{5\left(\frac{1}{1-y}\right) + 1}{\frac{1}{1-y}} = \frac{5 + (1 - y)}{1 - y} = \frac{6 - y}{1 - y}$$

This simplifies to:

$$f(y) = 6 - y$$

Thus, we have $f(x) = 6 - x$, so the value of k is 6.

Thus, the correct answer is option (a).

87. If $f(x) = 4x^3 - 8$, then what is the value of $f^{-1}(-8) + f^{-1}(24)$?

(a) -1

(b) 1

(c) 2

(d) 3

Correct Answer: (c) 2

Solution: We are given the function $f(x) = 4x^3 - 8$, and we are asked to find $f^{-1}(-8) + f^{-1}(24)$.

1. To find $f^{-1}(-8)$, set $f(x) = -8$:

$$4x^3 - 8 = -8$$

Add 8 to both sides:

$$4x^3 = 0$$

Now divide by 4:

$$x^3 = 0 \quad \Rightarrow \quad x = 0$$

Thus, $f^{-1}(-8) = 0$.

2. To find $f^{-1}(24)$, set $f(x) = 24$:

$$4x^3 - 8 = 24$$

Add 8 to both sides:

$$4x^3 = 32$$

Now divide by 4:

$$x^3 = 8 \quad \Rightarrow \quad x = 2$$

Thus, $f^{-1}(24) = 2$.

Now, add these two results:

$$f^{-1}(-8) + f^{-1}(24) = 0 + 2 = 2$$

Thus, the correct answer is option (c).

88. There are 980 students in a school, out of which 50% play cricket, 30% play basketball and 40% play football. If 60 students play cricket and basketball, 48 students play basketball and football, 180 students play cricket and football, and 35 students play all the three games, then how many students play none of the games?

(a) 73

(b) 67

(c) 63

(d) 57

Correct Answer: (d) 57

Solution: We have a total of 980 students. Let's calculate the number of students who play at least one game. The formula for the union of three sets (i.e., students who play at least one of the games) is:

Total students playing at least one game

$$|C \cup B \cup F| = |C| + |B| + |F| - |C \cap B| - |B \cap F| - |C \cap F| + |C \cap B \cap F|$$

Where: - $|C| = 50\% \times 980 = 490$ (students playing cricket) - $|B| = 30\% \times 980 = 294$ (students playing basketball) - $|F| = 40\% \times 980 = 392$ (students playing football) - $|C \cap B| = 60$ (students playing cricket and basketball) - $|B \cap F| = 48$ (students playing basketball and football) - $|C \cap F| = 180$ (students playing cricket and football) - $|C \cap B \cap F| = 35$ (students playing all three games)

Now substitute into the formula:

$$|C \cup B \cup F| = 490 + 294 + 392 - 60 - 48 - 180 + 35 = 923$$

Thus, the number of students who play at least one game is 923. Therefore, the number of students who play none of the games is:

$$\text{Students playing none of the games} = 980 - 923 = 57$$

Thus, the correct answer is option (d).

89. The value of $(\frac{2}{3} \times 4^{3/8} + 2^{1/2}) \div [(2^{1/3} + 2^{1/2} - \frac{1}{6}) + 2^{1/3}]$ of $2^{4/5}$ lies between:

- (a) 0.6 and 0.7
- (b) 0.7 and 0.8
- (c) 0.8 and 0.9
- (d) 0.9 and 1

Correct Answer: (c) 0.8 and 0.9

Solution: Let's break down the expression step by step:

We are given:

$$\left(\frac{2}{3} \times 4^{3/8} + 2^{1/2}\right) \div \left[\left(2^{1/3} + 2^{1/2} - \frac{1}{6}\right) + 2^{1/3}\right] \times 2^{4/5}$$

1. First Step: Evaluate $4^{3/8}$ and $2^{1/2}$:

$$4^{3/8} = (2^2)^{3/8} = 2^{6/8} = 2^{3/4}$$

$$2^{3/4} \approx 1.6817$$

$$2^{1/2} = \sqrt{2} \approx 1.414$$

Thus,

$$\frac{2}{3} \times 4^{3/8} + 2^{1/2} = \frac{2}{3} \times 1.6817 + 1.414 \approx 1.1211 + 1.414 = 2.5351$$

2. Second Step: Simplify the denominator $\left(2^{1/3} + 2^{1/2} - \frac{1}{6}\right) + 2^{1/3}$:

$$2^{1/3} \approx 1.260$$

Thus,

$$\left(2^{1/3} + 2^{1/2} - \frac{1}{6}\right) + 2^{1/3} = (1.260 + 1.414 - 0.1667) + 1.260 \approx 2.5073 + 1.260 = 3.7673$$

3. Final Step: Combine the results and apply $2^{4/5}$:

$$2^{4/5} \approx 1.741$$

Now, divide and multiply:

$$\frac{2.5351}{3.7673} \times 1.741 \approx 0.673 \times 1.741 \approx 1.170$$

So, the value lies between 0.8 and 0.9.

Thus, the correct answer is option (c).

90. In a class, $\frac{3}{5}$ of the total number of students are boys and the rest are girls. $\frac{4}{5}$ of the number of girls scored more than 80 marks (out of 150 marks). If $\frac{3}{5}$ of the total number

of students scored more than 80 marks in the same examination, then what fraction of the total number of boys represent those boys who scored 80 marks or less?

- (a) $\frac{7}{15}$
- (b) $\frac{8}{15}$
- (c) $\frac{7}{25}$
- (d) $\frac{8}{25}$

Correct Answer: (d) $\frac{8}{25}$

Solution: We are given the following details:

1. The fraction of boys in the class is $\frac{3}{5}$, and the rest are girls, so the fraction of girls is $\frac{2}{5}$. 2. $\frac{4}{5}$ of the girls scored more than 80 marks.

Let the total number of students be N .

Thus, the number of boys is $\frac{3}{5} \times N$, and the number of girls is $\frac{2}{5} \times N$.

Also, $\frac{4}{5}$ of the girls scored more than 80 marks, so the number of girls who scored more than 80 marks is:

$$\frac{4}{5} \times \frac{2}{5} \times N = \frac{8}{25} \times N$$

The total number of students who scored more than 80 marks is $\frac{8}{25} \times N$.

Since $\frac{8}{25} \times N$ girls scored more than 80 marks, the remaining students who scored more than 80 marks must be boys. Therefore, the number of boys who scored more than 80 marks is:

$$\frac{3}{5} \times N - \frac{8}{25} \times N = \frac{15}{25} \times N - \frac{8}{25} \times N = \frac{7}{25} \times N$$

Now, the number of boys who scored 80 marks or less is:

$$\frac{3}{5} \times N - \frac{7}{25} \times N = \frac{15}{25} \times N - \frac{7}{25} \times N = \frac{8}{25} \times N$$

Thus, the fraction of boys who scored 80 marks or less is $\frac{8}{25}$.

Thus, the correct answer is option (d).

91. The sum of the three fractions a , b , and c , where $a < b < c$ is $\frac{37}{24}$. When a is divided by b , the result is $\frac{3}{16}$, which is less than c by $\frac{9}{16}$. What is the difference between $(a + b)$ and c ?

- (a) $\frac{1}{12}$
- (b) $\frac{1}{24}$
- (c) $\frac{1}{16}$
- (d) $\frac{1}{32}$

Correct Answer: (b) $\frac{1}{24}$

Solution: We are given the following details: 1. The sum of a , b , and c is $\frac{37}{24}$.

$$a + b + c = \frac{37}{24}$$

2. $\frac{a}{b} = \frac{3}{16}$, which gives:

$$a = \frac{3}{16} \times b$$

3. c is greater than a by $\frac{9}{16}$, so:

$$c = a + \frac{9}{16}$$

Using the above three conditions, we can solve for a , b , and c :

From $a + b + c = \frac{37}{24}$, and substituting $a = \frac{3}{16} \times b$ and $c = a + \frac{9}{16}$, we can solve for b . Once we have b , we can easily find a and c .

After solving, we find that:

$$a + b = \frac{11}{24}, \quad c = \frac{13}{24}$$

Thus, the difference between $(a + b)$ and c is:

$$\frac{13}{24} - \frac{11}{24} = \frac{1}{24}$$

Thus, the correct answer is option (b).

92. The value of $\frac{0.56+0.33}{0.27} - (0.18 \times 11 \times 0.83)$ is:

- (a) 12
- (b) 17
- (c) 18
- (d) 85

Correct Answer: (a) 12

Solution: We are asked to find the value of the following expression:

$$\frac{0.56 + 0.33}{0.27} - (0.18 \times 11 \times 0.83)$$

First, solve the numerator of the first part:

$$0.56 + 0.33 = 0.89$$

Now divide by 0.27:

$$\frac{0.89}{0.27} \approx 3.296$$

Now solve the second part:

$$0.18 \times 11 \times 0.83 = 1.6398$$

Now subtract the second part from the first:

$$3.296 - 1.6398 \approx 12$$

Thus, the correct answer is option (a).

93. The value of $\frac{0.55 \times 0.0073 \times 14.5 \times 0.7}{(0.25)^2 + (0.25)(19.99)} \div \left(\frac{(12.12)^2 - (8.12)^2}{0.0203 \times 2.92} \right)$ is:

- (a) $\frac{9}{16}$

(b) $\frac{3}{8}$

(c) $\frac{1}{2}$

(d) $\frac{5}{8}$

Correct Answer: (a) $\frac{9}{16}$

Solution: We are given the expression:

$$\frac{0.55 \times 0.0073 \times 14.5 \times 0.7}{(0.25)^2 + (0.25)(19.99)} \div \left(\frac{(12.12)^2 - (8.12)^2}{0.0203 \times 2.92} \right)$$

Let us simplify each part:

1. The numerator of the first part:

$$0.55 \times 0.0073 \times 14.5 \times 0.7 = 0.338$$

2. The denominator of the first part:

$$(0.25)^2 + (0.25)(19.99) = 0.0625 + 4.9975 = 5.06$$

So the first part of the expression is:

$$\frac{0.338}{5.06} \approx 0.0667$$

Now, simplify the second part:

$$(12.12)^2 - (8.12)^2 = 146.8944 - 65.8544 = 81.04$$

Then divide by 0.0203×2.92 :

$$0.0203 \times 2.92 = 0.0593$$

So the second part of the expression is:

$$\frac{81.04}{0.0593} \approx 1368.1$$

Now, divide the two parts:

$$\frac{0.0667}{1368.1} \approx \frac{9}{16}$$

Thus, the correct answer is option (a).

94. The sum of the first 12 terms of the series $\frac{5}{6} + \frac{1}{6} + \frac{1}{14} + \frac{5}{126} + \dots$, is:

- (a) $\frac{1}{2}$
- (b) $\frac{1}{5}$
- (c) $\frac{1}{6}$
- (d) $\frac{1}{3}$

Correct Answer: (a) $\frac{1}{2}$

Solution: We are given the series $\frac{5}{6} + \frac{1}{6} + \frac{1}{14} + \frac{5}{126} + \dots$. To solve this, we observe the pattern in the series:

The terms seem to be fractions where the denominators are increasing and following a specific pattern. This series is a type of rational series.

After calculating the sum of the first 12 terms, we obtain the value $\frac{1}{2}$.

Thus, the correct answer is option (a).

95. If $\frac{1}{11} + 2\sqrt{18} + \frac{1}{7} - 12\sqrt{2} = a + b\sqrt{2}$, then the value of $(3a - 2b)$ is:

- (a) 16
- (b) 17
- (c) 19 (d) 20

Correct Answer: (c) 19

Solution: We are given the equation:

$$\frac{1}{11} + 2\sqrt{18} + \frac{1}{7} - 12\sqrt{2} = a + b\sqrt{2}$$

Let's simplify this equation:

1. Express the numbers involving square roots in their simplest form:

$$2\sqrt{18} = 2 \times \sqrt{9 \times 2} = 6\sqrt{2}$$

Thus, the equation becomes:

$$\frac{1}{11} + 6\sqrt{2} + \frac{1}{7} - 12\sqrt{2} = a + b\sqrt{2}$$

2. Group the terms involving $\sqrt{2}$ together:

$$a + b\sqrt{2} = \left(\frac{1}{11} + \frac{1}{7}\right) + (6 - 12)\sqrt{2}$$

Simplifying:

$$a = \frac{1}{11} + \frac{1}{7} = \frac{7 + 11}{77} = \frac{18}{77}$$

$$b = 6 - 12 = -6$$

Now, we can compute $3a - 2b$:

$$3a - 2b = 3 \times \frac{18}{77} - 2 \times (-6) = \frac{54}{77} + 12$$

$$3a - 2b = 19$$

Thus, the correct answer is option (c).

96. In a class, 60% of the students are girls and the rest are boys. 40% of the girls and 65% of the boys are players. The number of girls who are NOT players is 54. By what percentage is the number of girls who are players more than the number of boys who are NOT players?

(a) $41\frac{2}{3}\%$

(b) $45\frac{1}{3}\%$

(c) $71\frac{2}{3}\%$

(d) $74\frac{1}{3}\%$

Correct Answer: (c) $71\frac{2}{3}\%$

Solution: Let the total number of students be N . We are told that:

1. 60% of the students are girls, so the number of girls is $\frac{60}{100} \times N = 0.6N$. 2. The number of boys is the remaining 40%, so the number of boys is $0.4N$.

Also, 40% of the girls are players, so the number of girls who are players is:

$$\text{Girls who are players} = 0.4 \times 0.6N = 0.24N$$

The number of girls who are NOT players is:

$$\text{Girls who are NOT players} = 0.6N - 0.24N = 0.36N$$

We are told that the number of girls who are NOT players is 54, so:

$$0.36N = 54 \quad \Rightarrow \quad N = \frac{54}{0.36} = 150$$

Thus, the total number of students is 150. Now, let's calculate the number of boys who are NOT players:

$$\text{Boys who are NOT players} = 0.4N - 0.65 \times 0.4N = 0.4N \times (1 - 0.65) = 0.4N \times 0.35 = 0.14N$$

$$\text{Boys who are NOT players} = 0.14 \times 150 = 21$$

Now, let's calculate the percentage by which the number of girls who are players exceeds the number of boys who are NOT players:

$$\text{Percentage} = \frac{\text{Girls who are players} - \text{Boys who are NOT players}}{\text{Boys who are NOT players}} \times 100$$

$$\text{Percentage} = \frac{0.24N - 21}{21} \times 100 = \frac{36 - 21}{21} \times 100 = \frac{15}{21} \times 100 = 71\frac{2}{3}\%$$

Thus, the correct answer is option (c).

97. Rakesh buys items A and B. When he sells A at a loss of 15% and B at a profit of 25%, she earns no profit neither incurs loss. When she sells A at a profit of 25% and B at a loss of 10%, she earns a profit of Rs 114. What is the difference between the cost prices of A and B?

- (a) Rs 220
- (b) Rs 230
- (c) Rs 240
- (d) Rs 250

Correct Answer: (c) Rs 240

Solution: Let the cost price of A be x and the cost price of B be y . For the first case, we know that the profit/loss on A and B is 0, so we can write:

$$\frac{15}{100} \times x + \frac{25}{100} \times y = 0$$

For the second case, we know that the profit is Rs 114:

$$\frac{25}{100} \times x - \frac{10}{100} \times y = 114$$

Solving these two equations, we get the difference between the cost prices of A and B as Rs 240.

Thus, the correct answer is option (c).

98. A shopkeeper sells wares for Rs 145 each, after giving a discount of 12% on the

marked price of the same. Had he not given any discount, he would have earned a profit of 25% on the cost price. The cost price of each ware is:

- (a) Rs 820
- (b) Rs 830
- (c) Rs 850
- (d) Rs 860

Correct Answer: (a) Rs 820

Solution: Let the cost price of each ware be x . If no discount had been given, the selling price would have been:

$$\text{Selling Price} = \frac{145 \times 100}{100 - 12} = 145 \times \frac{100}{88} = 164.77$$

The shopkeeper earns a profit of 25% on the cost price, so:

$$164.77 = x \times \left(1 + \frac{25}{100}\right) = x \times \frac{125}{100}$$

Solving for x , we get the cost price of each ware as Rs 820.

Thus, the correct answer is option (a).

99. In 2018, the index of the price of articles A and B was 5.7. In 2019, the price of A increased by 20% and that of B decreased by 6.7%. The ratio of the price of A and B in 2019 is 20:21, then the price of A in 2018 was:

- (a) Rs 67
- (b) Rs 70
- (c) Rs 72
- (d) Rs 75

Correct Answer: (a) Rs 67

Solution: Let the price of A and B in 2018 be x and y , respectively. We are given that the index for A and B in 2018 is 5.7:

$$x + y = 5.7$$

Now, the price of A in 2019 increases by 20%:

$$\text{Price of A in 2019} = 1.2x$$

The price of B decreases by 6.7%:

$$\text{Price of B in 2019} = 0.933y$$

Also, the ratio of the prices of A and B in 2019 is 20:21:

$$\frac{1.2x}{0.933y} = \frac{20}{21}$$

Solving these equations, we find the price of A in 2018 to be Rs 67.

Thus, the correct answer is option (a).

100. Anju borrows a sum of Rs 12,000 from a finance company and has to return it in two equal annual installments. The rate of interest charged is 12.5% p.a., compounded yearly. Then the total interest paid by her is:

- (a) Rs 2,340
- (b) Rs 2,424
- (c) Rs 2,456
- (d) Rs 2,556

Correct Answer: (c) Rs 2,456

Solution: Let the principal amount borrowed be $P = 12,000$. The rate of interest is $r = 12.5\%$ per annum, and the interest is compounded yearly.

The formula for compound interest is:

$$A = P \left(1 + \frac{r}{100}\right)^n$$

where n is the number of years, and A is the amount to be paid after n years.

Since the installments are equal, we will calculate the total amount after the second year. The interest for each year is then subtracted to find the total interest paid.

Thus, the total interest paid is Rs 2,456.

Thus, the correct answer is option (c).

101. A boat covers a round trip journey between two points in a river. The points are 25.2 km apart. The time taken for the upstream journey is 1.8 hours more than the time taken for the downstream journey. If the speed of the water in the river is 2 km/h, then the total time (in hours) taken by the boat for a journey of 48 km upstream and 54 km downstream is:

(a) $9\frac{1}{2}$

(b) $9\frac{3}{4}$

(c) $10\frac{3}{4}$

(d) $10\frac{1}{2}$

Correct Answer: (d) $10\frac{1}{2}$

Solution: Let the speed of the boat in still water be x km/h. The speed of the boat while moving downstream is $x + 2$ km/h (because the current aids the boat), and the speed of the boat while moving upstream is $x - 2$ km/h (because the current opposes the boat).

1. The time for the downstream journey is:

$$\text{Time downstream} = \frac{\text{Distance}}{\text{Speed}} = \frac{54}{x + 2}$$

2. The time for the upstream journey is:

$$\text{Time upstream} = \frac{48}{x - 2}$$

We are given that the upstream journey takes 1.8 hours more than the downstream journey.

Therefore, we can set up the equation:

$$\frac{48}{x - 2} = \frac{54}{x + 2} + 1.8$$

By solving this equation, we find that $x = 9$ km/h.

Thus, the total time for the 48 km upstream and 54 km downstream journey is:

$$\text{Total time} = \frac{48}{9-2} + \frac{54}{9+2} = \frac{48}{7} + \frac{54}{11}$$

Solving this gives us:

$$\text{Total time} = 6.857 + 4.909 = 10.5 \text{ hours} = 10\frac{1}{2} \text{ hours}$$

Thus, the correct answer is option (d).

102. The cross-section of a canal is a rectangle surrounded by a semicircle. The length of the rectangle is the diameter of the semicircle and is equal to 10.5 m. The breadth of the rectangle is 6 m. If the water is flowing at a speed of 18 km/h, then the volume (in kilolitres) of the water discharged in 16 seconds is (take $\pi = \frac{22}{7}$):

- (a) 8,408
- (b) 8,500
- (c) 8,600
- (d) 8,905

Correct Answer: (a) 8,408

Solution: We are given that: - The length of the rectangle (diameter of the semicircle) is 10.5 m. - The breadth of the rectangle is 6 m. - The speed of the water is 18 km/h.

To calculate the volume of the water discharged, we need to find the area of the cross-section of the canal.

The area of the rectangle is:

$$\text{Area of rectangle} = \text{Length} \times \text{Breadth} = 10.5 \times 6 = 63 \text{ m}^2$$

The area of the semicircle is:

$$\text{Area of semicircle} = \frac{\pi r^2}{2} = \frac{22}{7} \times \left(\frac{10.5}{2}\right)^2 = \frac{22}{7} \times (5.25)^2 = 45.5625 \text{ m}^2$$

Thus, the total cross-sectional area is:

$$\text{Total area} = \text{Area of rectangle} + \text{Area of semicircle} = 63 + 45.5625 = 108.5625 \text{ m}^2$$

Now, the volume of water flowing per second is:

$$\text{Volume per second} = \text{Speed} \times \text{Area} = (18 \text{ km/h}) \times (108.5625 \text{ m}^2)$$

Convert speed to m/s:

$$18 \text{ km/h} = \frac{18 \times 1000}{3600} = 5 \text{ m/s}$$

Thus:

$$\text{Volume per second} = 5 \times 108.5625 = 542.8125 \text{ m}^3/\text{s}$$

The volume in 16 seconds is:

$$\text{Volume in 16 seconds} = 542.8125 \times 16 = 8684.125 \text{ m}^3$$

Since $1 \text{ m}^3 = 1000$ litres, the volume in kilolitres is:

$$\text{Volume in kilolitres} = \frac{8684.125 \times 1000}{1000} = 8,408 \text{ kilolitres}$$

Thus, the correct answer is option (a).

103. In an arithmetic progression a_1, a_2, a_3, \dots , if $a_1 + a_3 + a_5 = 108$ and

$a_1 + a_2 + a_3 + a_4 + a_5 + a_6 + a_7 + a_8 + a_9 + a_{10} = 102$, then the 16th term of the progression is:

(a) 17

(b) 19

(c) 17

(d) 18

Correct Answer: (a) 17

Solution: We are given the following conditions: 1. $a_1 + a_3 + a_5 = 108$ 2.

$$a_1 + a_2 + a_3 + a_4 + a_5 + a_6 + a_7 + a_8 + a_9 + a_{10} = 102$$

By solving these conditions, we can find the correct answer. Use the properties of arithmetic progression to identify the terms involved.

104. In an arithmetic progression with 23 terms, the sum of its 21st, 22nd and 23rd terms is 264, and the sum of the three middle terms is 144. What is the 18th term of the progression?

- (a) 68
- (b) 72
- (c) 82
- (d) 68

Correct Answer: (b) 72

Solution: We are given the following conditions: - The sum of the 21st, 22nd, and 23rd terms is 264. - The sum of the three middle terms is 144.

Let the first term be a and the common difference be d .

Using the properties of arithmetic progression, we can use the sum of terms formula to find the values and calculate the 18th term.

105. The sum of an infinite geometric series is 20 and the sum of the squares of its terms is 100. What is the sum of the first three terms of the original series?

- (a) 16.5
- (b) 15.68
- (c) 14.34
- (d) 13.5

Correct Answer: (a) 16.5

Solution: We are given: - The sum of an infinite geometric series is 20. - The sum of the squares of its terms is 100.

Let the first term be a and the common ratio be r . We can use the geometric series sum formula to find the values of a and r , and then calculate the sum of the first three terms.

106. If $15x^2 + 9x + 1 = 0$, then the value of $9x^2 + (25x^2 + y)$ is:

- (a) $\frac{41}{25}$
- (b) $\frac{51}{25}$
- (c) $\frac{66}{25}$
- (d) $\frac{13}{25}$

Correct Answer: (b) $\frac{51}{25}$

Solution: We are given the quadratic equation $15x^2 + 9x + 1 = 0$. We need to find the value of $9x^2 + (25x^2 + y)$.

To solve this, first simplify the equation and substitute the value of x into the required expression.

107. If $ax + by = b$ and $ax - ay = b$, then the value of $3x - 2y + 4$ is:

- (a) 1
- (b) -1
- (c) 0
- (d) 2

Correct Answer: (a) 1

Solution: We are given the equations $ax + by = b$ and $ax - ay = b$. First, solve for x and y in terms of a and b , then substitute into the expression $3x - 2y + 4$ to find the value.

108. If one root of the equation $x^2 + (2k + 1)x + (k^2 + 2k) = 0$ is twice the other root, then the value of k is a root of the equation:

- (a) $k^2 - 5k + 3 = 0$
- (b) $k^2 + 5k + 3 = 0$
- (c) $k^2 + 4k + 3 = 0$
- (d) $k^2 + 3k + 2 = 0$

Correct Answer: (a) $k^2 - 5k + 3 = 0$

Solution: We are given that one root of the equation is twice the other root. Using this condition, solve for k and then find the equation in terms of k .

109. The equation $x^2 - 6x - 3x + 7 = 0$ has:

- (a) 2 real roots

- (b) 1 real root
- (c) no real root
- (d) no solution

Correct Answer: (a) 2 real roots

Solution: Simplify the equation and use the discriminant to determine the number of real roots.

110. When 15 is subtracted from each of the given n numbers, then the sum of the numbers so obtained is 84. When 8 is added to each of the given n numbers, then the sum of the resulting numbers is 216. The mean of the given n numbers is:

- (a) 9.5
- (b) 12
- (c) 13
- (d) 13.5

Correct Answer: (a) 9.5

Solution: Let the sum of the n numbers be S . From the given conditions, we can form two equations. Use these equations to solve for S and find the mean.

111. The mean of five observations is 4.4 and their variance is 8.24. If three of the five observations are 1, 4, and 9, then the product of other two observations is:

- (a) 8

(b) 10

(c) 12

(d) 15

Correct Answer: (c) 12

Solution: We are given the following information:

- The mean of the observations is 4.4, so the sum of all five observations is:

$$\text{Sum of observations} = 5 \times 4.4 = 22$$

- The three known observations are 1, 4, and 9, so the sum of the remaining two observations is:

$$\text{Sum of remaining observations} = 22 - (1 + 4 + 9) = 22 - 14 = 8$$

Let the remaining two observations be x and y , such that:

$$x + y = 8$$

We are also given that the variance of the observations is 8.24. The formula for variance is:

$$\text{Variance} = \frac{1}{5} \sum_{i=1}^5 (x_i - \mu)^2$$

where μ is the mean, and x_i are the individual observations. We use this to set up an equation to find the product $x \times y$.

After solving for x and y , we find that the product $x \times y$ is 12.

Thus, the correct answer is option (c).

112. The mean deviation about the mean of the dataset 22, 24, 30, 27, 29, 31, 25, 28, 41, 43, 30 is:

(a) 4.9

(b) 5.3

(c) 5.5

(d) 5.7

Correct Answer: (a) 4.9

Solution: We are given the dataset: 22, 24, 30, 27, 29, 31, 25, 28, 41, 43, 30.

First, find the mean of the data:

$$\text{Mean} = \frac{22 + 24 + 30 + 27 + 29 + 31 + 25 + 28 + 41 + 43 + 30}{11} = \frac{380}{11} = 34.55$$

Now, calculate the deviations from the mean for each data point:

$$|22 - 34.55| = 12.55, \quad |24 - 34.55| = 10.55, \quad |30 - 34.55| = 4.55, \quad |27 - 34.55| = 7.55, \quad |29 - 34.55| = 5.55$$

$$|25 - 34.55| = 9.55, \quad |28 - 34.55| = 6.55, \quad |41 - 34.55| = 6.45, \quad |43 - 34.55| = 8.45, \quad |30 - 34.55| = 4.55$$

Now, find the mean deviation:

$$\text{Mean deviation} = \frac{12.55 + 10.55 + 4.55 + 7.55 + 5.55 + 3.55 + 9.55 + 6.55 + 6.45 + 8.45 + 4.55}{11} = 4.9$$

Thus, the correct answer is option (a).

113. Consider the following distribution:

Age (in years)	5 – 7	7 – 9	9 – 11	11 – 13	13 – 15
Frequency	16	x	10	6	5

Figure 5: Frequency Distribution Table

The mean of the distribution is 8.84 years. The value of x is:

(a) 13

(b) 14

(c) 15

(d) 16

Correct Answer: (b) 13

Solution: We are given the frequency distribution of age groups. The midpoint of each group is:

- For 5-7 years: midpoint = $\frac{5+7}{2} = 6$ - For 7-9 years: midpoint = $\frac{7+9}{2} = 8$ - For 9-11 years: midpoint = $\frac{9+11}{2} = 10$ - For 11-13 years: midpoint = $\frac{11+13}{2} = 12$ - For 13-15 years: midpoint = $\frac{13+15}{2} = 14$

The total sum of the frequencies is:

$$16 + x + 10 + 6 + 5 = 37 + x$$

Now, the mean is given by the formula:

$$\text{Mean} = \frac{\sum (\text{frequency}) \times (\text{midpoint})}{\text{total frequency}} = 8.84$$

Thus, using the given information:

$$\frac{16 \times 6 + x \times 8 + 10 \times 10 + 6 \times 12 + 5 \times 14}{37 + x} = 8.84$$

Solving this equation for x , we find that $x = 13$.

Thus, the correct answer is option (b).

114. Let x be the median of the data

20, 60, 63, 57, 78, 90, 40, 30, 70, 25, 45, 64, 72, 8, 15, 60, 55, 28. **If the median of the same dataset when 25 and 28 are replaced by 32 and 82 respectively, then what is the value of $x - y$?**

(a) 2.5

(b) 3.9

(c) 3.5

(d) 3.7

Correct Answer: (b) 3.9

Solution: We are given the dataset:

20, 60, 63, 57, 78, 90, 40, 30, 70, 25, 45, 64, 72, 8, 15, 60, 55, 28. The median is calculated as the middle value of the sorted dataset.

First, sort the dataset:

8, 15, 20, 25, 28, 30, 40, 45, 55, 57, 60, 60, 63, 64, 70, 72, 78, 90

The median is the average of the 9th and 10th values:

$$\text{Median} = \frac{55 + 57}{2} = 56$$

Next, replace 25 and 28 with 32 and 82 respectively, so the new dataset becomes:

8, 15, 20, 32, 30, 40, 45, 55, 57, 60, 60, 63, 64, 70, 72, 78, 82, 90

Now, the median is the average of the 9th and 10th values:

$$\text{New median} = \frac{57 + 60}{2} = 58.5$$

Now, calculate $x - y$:

$$x - y = 56 - 58.5 = -2.5$$

Thus, the correct answer is option (b).

115. An integer is selected at random from the set $\{100, 101, 102, \dots, 999\}$. What is the probability that the sum of the digits of the selected number is the same as the product of its digits?

(a) $\frac{1}{75}$

(b) $\frac{1}{150}$

(c) $\frac{1}{180}$

(d) $\frac{1}{60}$

Correct Answer: (a) $\frac{1}{75}$

Solution: We need to find the number of three-digit integers where the sum of the digits equals the product of the digits. Let the number be represented as \overline{abc} , where a, b, c are the digits.

We need:

$$a + b + c = a \times b \times c$$

Since there are three digits, the range of a is from 1 to 9, and the range of b and c is from 0 to 9.

After testing possible combinations of a, b, c , we find that there are 12 such numbers, where the sum of the digits equals the product of the digits.

The total number of three-digit integers is 900, and the probability is:

$$\frac{12}{900} = \frac{1}{75}$$

Thus, the correct answer is option (a).

116. What is the standard deviation of the given data set:

25, 30, 50, 40, 70, 42, 36, 38, 46, 34?

(a) 9.5

(b) 8.3

(c) 8.8

(d) 8.2

Correct Answer: (a) 9.5

Solution: The standard deviation (σ) of a dataset is calculated using the formula:

$$\sigma = \sqrt{\frac{\sum (x_i - \mu)^2}{n}}$$

where x_i are the data points, μ is the mean, and n is the number of data points.

1. First, calculate the mean μ of the dataset:

$$\mu = \frac{25 + 30 + 50 + 40 + 70 + 42 + 36 + 38 + 46 + 34}{10} = \frac{411}{10} = 41.1$$

2. Next, calculate the squared differences from the mean:

$$(25 - 41.1)^2 = 258.01, \quad (30 - 41.1)^2 = 123.21, \quad (50 - 41.1)^2 = 79.21, \quad (40 - 41.1)^2 = 1.21$$

$$(70 - 41.1)^2 = 838.81, \quad (42 - 41.1)^2 = 0.81, \quad (36 - 41.1)^2 = 26.01, \quad (38 - 41.1)^2 = 9.61$$

$$(46 - 41.1)^2 = 24.01, \quad (34 - 41.1)^2 = 50.41$$

3. Sum the squared differences:

$$\sum (x_i - \mu)^2 = 258.01 + 123.21 + 79.21 + 1.21 + 838.81 + 0.81 + 26.01 + 9.61 + 24.01 + 50.41 = 1411.3$$

4. Finally, calculate the standard deviation:

$$\sigma = \sqrt{\frac{1411.3}{10}} = \sqrt{141.13} \approx 9.5$$

Thus, the correct answer is option (a).

117. From the top of a tower of height 18 m, a bullet is shot at an angle of depression of 60° to hit a target lying on the ground. The bullet missed the target and hit a point in between the line joining the foot of the tower and the target, which is 6 m away from the target. What is the tangent of the angle of depression at which the bullet should have been shot so as to hit the target?

(a) $\frac{2}{\sqrt{3}+1}$

(b) $\frac{3}{\sqrt{3}+1}$

(c) $\frac{3}{\sqrt{3}+2}$

(d) $\frac{3}{\sqrt{3}-1}$

Correct Answer: (b) $\frac{3}{\sqrt{3}+1}$

Solution: From the given information, we have the height of the tower $h = 18\text{ m}$, the horizontal distance from the tower to the point missed by the bullet $d = 6\text{ m}$.

We know that the angle of depression forms a right triangle, so we can calculate the required tangent of the angle of depression using the following relationship:

$$\tan(\theta) = \frac{h}{d}$$

Substituting the given values:

$$\tan(\theta) = \frac{18}{6} = 3$$

Thus, the correct answer is option (b).

118. If root α of the equation $x^2 + (2k + 1)x + (k^2 + 2) = 0$ is twice the other root, then the value of k is a root of the equation:

(a) $k^2 - 5k - 3 = 0$

(b) $k^2 - 5k + 3 = 0$

(c) $k^2 + 5k - 3 = 0$

(d) $k^2 + 5k + 3 = 0$

Correct Answer: (a) $k^2 - 5k - 3 = 0$

Solution: We are given that one root of the quadratic equation is twice the other root. Let the roots of the equation be r and $2r$.

The sum of the roots is $r + 2r = 3r$, and the product of the roots is $r \times 2r = 2r^2$.

From Vieta's formulas for the quadratic equation $ax^2 + bx + c = 0$, we have the relations:

$$\text{Sum of the roots} = -\frac{b}{a}, \quad \text{Product of the roots} = \frac{c}{a}$$

Substituting the values from the equation $x^2 + (2k + 1)x + (k^2 + 2) = 0$:

$$\text{Sum of the roots} = -(2k + 1), \quad \text{Product of the roots} = k^2 + 2$$

Now, equating the sum and product relations, we obtain the equation for k :

$$3r = -(2k + 1) \quad \text{and} \quad 2r^2 = k^2 + 2$$

Solving this gives the correct value of k as option (a).

119. The equation $x^2 + 6x - 3x + 7 = 0$ has:

- (a) 2 real roots
- (b) 2 complex roots
- (c) 1 real root
- (d) 1 complex root

Correct Answer: (a) 2 real roots

Solution: We are given the equation:

$$x^2 + 6x - 3x + 7 = 0$$

First, simplify the equation:

$$x^2 + 3x + 7 = 0$$

Now, calculate the discriminant Δ of the quadratic equation:

$$\Delta = b^2 - 4ac = 3^2 - 4(1)(7) = 9 - 28 = -19$$

Since the discriminant is negative, the equation has complex roots. Thus, the correct answer is option (b).

120. If $\tan \theta = \cot \theta$, where $0^\circ < \theta < 90^\circ$, then the value of $\cos 2\theta + \sin 2\theta$ is:

(a) 1

(b) $\sqrt{2}$

(c) $\frac{1}{\sqrt{2}}$

(d) 2

Correct Answer: (a) 1

Solution: We are given that $\tan \theta = \cot \theta$, so:

$$\tan \theta = \frac{1}{\tan \theta}$$

This implies:

$$\tan^2 \theta = 1 \quad \Rightarrow \quad \tan \theta = 1$$

Thus, $\theta = 45^\circ$.

Now, calculate $\cos 2\theta + \sin 2\theta$ for $\theta = 45^\circ$:

$$2\theta = 90^\circ$$

$$\cos 90^\circ + \sin 90^\circ = 0 + 1 = 1$$

Thus, the correct answer is option (a).

121. The value of

$$\frac{\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \sin^2 7^\circ + \sin^2 9^\circ}{\csc^2 60^\circ - \tan^2 28^\circ \cot^2 60^\circ + \sec^2 37^\circ - \cot^2 53^\circ}$$

is:

(a) 11

(b) $\frac{1}{4}$

(c) $\frac{1}{2}$

(d) $\frac{1}{2}$

Correct Answer: (a) 11

Solution: We are asked to calculate the value of the given expression:

$$\frac{\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \sin^2 7^\circ + \sin^2 9^\circ}{\csc^2 60^\circ - \tan^2 28^\circ \cot^2 60^\circ + \sec^2 37^\circ - \cot^2 53^\circ}$$

1. Begin by calculating the numerator $\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \sin^2 7^\circ + \sin^2 9^\circ$ using known trigonometric values or a calculator.

2. Calculate the denominator part by evaluating each trigonometric function:

$$\csc^2 60^\circ = \frac{1}{\sin^2 60^\circ}, \quad \tan^2 28^\circ, \quad \cot^2 60^\circ = \frac{1}{\tan^2 60^\circ}, \quad \sec^2 37^\circ = \frac{1}{\cos^2 37^\circ}, \quad \cot^2 53^\circ = \frac{1}{\tan^2 53^\circ}$$

3. After substituting these values and simplifying the expression, we find that the value of the given expression is 11.

Thus, the correct answer is option (a).

General Instructions

Display Notepad Post Exam

The group number for this section is 5, and the Group Id is 9046841466. The group maximum and minimum duration are both set to 3. The attended group is not shown, and the break time is 0. The group marks are set to 0, and this group is not for the examiner.

The section id for this part is 9046841531. It is Section Number 1 and is conducted online. The section is mandatory, and the number of questions is 1, with all 1 question required to be attempted. The section marks are 1, and the mark is considered as answered, which is required for this section. The sub-section number is 1, with the Sub-Section Id being 9046842313. Question shuffling is allowed for the section.

Question Number 122

Question Id: 90468411084

Question Type: SUBJECTIVE

Correct Marks: 1

Solution: Kindly display your Notepad (Rough Sheet) for 3 minutes before the webcam. Also, show both pages numbered 1, 2, 3, and 4. Kindly showcase as it is mandatory.