NDA/NA SOLVED PAPER 2022-I

GENERAL ABILITY

PART-A: ENGLISH

DIRECTIONS : *Each item in this section has a sentence with three underlined parts labelled (a), (b) and (c). Read each sentence to determine whether there is any error in any underlined part and indicate your response in the Answer Sheet against the corresponding letter, i.e., (a) or (b) or (c). If you find no error, your response should be indicated as (d).*

1. A company of five thousand soldiers, (*a*)
having marched tirelessly for over five days, (*b*)
have just moved into their cantonment. (*c*)
No error (*d*)

2. Every person who believes in principles (*a*)
must stand up to fight (*b*)
for their convictions. (*c*)
No error (*d*)

3. The Olympic Games reflects (*a*)
the highest spirit of (*b*)
human endeavour and achievement. (*c*)
No error (*d*)

4. The principal of the school (*a*)
stressed the need for discipline (*b*)
amongst the students. (*c*)
No error (*d*)

5. Failure is the stepping stone to success; (*a*)
however, successive failures are not (*b*)
successive stepping stones to success. (*c*)
No error (*d*)

6. India's strengths are (*a*)
its diversity of culture and (*b*)
the spirit of tolerance in it's people. (*c*)
No error (*d*)

7. Once considered ninth planet of the solar system, (*a*)
Pluto is today listed as the (*b*)
largest dwarf planet of the solar system. (*c*)
No error (*d*)

8. The greatest glory in life (*a*)
is to be able to realize ones dreams and ambitions (*b*)
without trampling on those of others. (*c*)
No error (*d*)

9. To be able to manage one's (*a*)
anger is a reflection of an individual's (*b*)
psychological maturity. (*c*)
No error (*d*)

10. A honest mistake (*a*)
is no more than that; (*b*)
just an honest mistake. (*c*)
No error (*d*)

DIRECTIONS : *Given below are some idioms/phrases followed by four alternative meanings to each. Choose the most appropriate answer from among the options (a), (b), (c) and (d).*

11. Counting your chickens
    (a) confident of success
    (b) greedily accumulating wealth
    (c) being careful about spending money
    (d) getting scared because of danger
12. The icing on the cake
    (a) baked food that is delicate and delicious with a topping
    (b) extra benefit over and above an already good deal
    (c) getting what you asked for
    (d) more than what is needed
13. A stitch in time
    (a) tailoring one's efforts efficiently
    (b) making an effort to succeed
    (c) inability to take timely decision
    (d) timely action that prevents a negative outcome
14. At sixes and sevens
    (a) on top of the situation
    (b) state of denial
    (c) state of total confusion
    (d) well-planned and prepared
15. Talking twenty to the dozen
    (a) talking hurriedly and rapidly
    (b) talking too much
    (c) talking without making sense
    (d) talking out of turn
16. Under the weather
    (a) walking in the rain
    (b) controlled by the elements
    (c) browbeaten by the heat
    (d) unwell
17. To sit on the fence
    (a) to act prompty
    (b) to be lazy
    (c) to be undecided
    (d) to sit without doing anything

18. Once in a blue moon
(a) romantic moment (b) occasionally
(c) rarely (d) often

19. Through thick and thin
(a) in genuine freindship
(b) through the best of everything
(c) among people both fat and slim
(d) through difficult times

20. Like chalk and cheese
(a) very different from each other
(b) without any blemish
(c) pure white in colour
(d) very like each other

DIRECTIONS : *Each of the following items in this section consists of a sentence, the parts of which have been jumbled. These parts have been labelled P, Q, R and S. Given below each sentence are four sequences namely (a), (b), (c) and (d). You are required to rearrange the jumbled parts of the sentence and mark your response accordingly.*

21. but perhaps the best way is to agree — *P*
there are many ways of dealing — *Q*
with them without excessive argumentation — *R*
with intransigent customers — *S*
The correct sequence should be
(a) *QPRS* (b) *QSPR*
(c) *PSQR* (d) *RSQP*

22. in the years following — *P*
India achieved remarkable economic development — *Q*
liberalization in the year 1991 — *R*
the landmark reforms inaugurated via — *S*
The correct sequence should be
(a) *PQRS* (b) *PRSQ*
(c) *SPRQ* (d) *QPSR*

23. was the victory secured by the women's hockey team — *P*
in the arena of sport, perhaps — *Q*
against Australia in the Tokyo Olympics — *R*
the greatest moment in Indian Olympic history — *S*
The correct sequence should be
(a) *SPQR* (b) *RPQS*
(c) *QSPR* (d) *QRPS*

24. in terms of GDP and GNP, — *P*
for gauging the success of a nation — *Q*
which are the two major determinants — *R*
economic progress is determined — *S*
The correct sequence should be
(a) *SQRP* (b) *RPQS*
(c) *SPRQ* (d) *QRPS*

25. with the aplomb of a stage artist, — *P*
that they are not men of straw — *Q*
they can twist and shake their wobbly heads — *R*
mesmerizing the gullible into believing — *S*
The correct sequence should be
(a) *PRQS* (b) *RPSQ*
(c) *SPQR* (d) *QRPS*

26. of its rain-soaked verdure — *P*
an on the other there are — *Q*
on the one hand there is the immense beauty — *R*
th artifacts of its visible modernity — *S*
The correct sequence should be
(a) *PRQS* (b) *QRSP*
(c) *SPQR* (d) *RPQS*

27. are often rooted — *P* the causes — *Q*
of extreme poverty — *R*
in the inequalities of social systems — *S*
The correct sequence should be
(a) *QRPS* (b) *QRSP*
(c) *SRQP* (d) *SRPQ*

28. a person by the way / *P* — he behaves and / *Q*

you must judge / *R* — not by the way he looks / *S*

The correct sequence should be

(a) *RPQS* (b) *QRSP*
(c) *RSQP* (d) *QPSR*

29. to the greatest number of people / *P*

that cuases the least discomfort / *Q*

whenever in doubt / *R* — always opt for the option / *S*

The correct sequence should be

(a) *RQPS* (b) *QRSP*
(c) *RSQP* (d) *QPSR*

30. brought by bad times / *P* — against the despondency / *Q*

our greatest defence / *R* — faith and belief are / *S*

The correct sequence should be

(a) *RQPS* (b) *SRQP*
(c) *RSQP* (d) *QPRS*

DIRECTIONS : *Each item in this section consists of a sentence with an underlined word followed by four words (a), (b), (c) and (d). Select the option that is opposite in meaning to the underlined word and mark your response in your Answer Sheet accordingly.*

31. He is essentially a crude person.
(a) coarse (b) refined
(c) eager (d) balanced

32. His confidence is high.
(a) diffidence (b) eagerness
(c) steadfastness (d) endurance

33. His integrity is noticed.
(a) skilfulness (b) ability
(c) dependability (d) dishonesty

34. She is a benevolent individual.
(a) clever (b) muddled
(c) malevolent (d) ambivalent

35. His sartorial manner is judged.
(a) unstylish (b) uncompromising
(c) common (d) crude

36. This piece of art is authentic.
(a) genuine (b) expensive
(c) rare (d) fake

37. The deluge affected the population.
(a) cloudburst (b) drought
(c) deforestation (d) drizzle

38. His dedication is known to all.
(a) clarity (b) hostility
(c) apathy (d) anger

39. His perspicacity was remarkable.
(a) smartness (b) dullness
(c) dedication (d) deviousness

40. He has a penchant for spicy food.
(a) tendency (b) affinity
(c) fear (d) dislike

DIRECTIONS : *Each item in this section consists of a sentence with an underlined word followed by four words (a), (b), (c) and (d). Select the option that is nearest in meaning to the underlined word and mark your response in your Answer Sheet accordingly.*

41. After a good meal, it is important to pay a compliment to the chef.
(a) tip (b) praise
(c) admonish (d) revile

42. His work is laudable.
(a) praiseworthy (b) laughable
(c) bold (d) loud

43. Raj is a competent carpenter.
(a) capable (b) exceptional
(c) inadept (d) clumsy

44. He is diligent in submitting assignments.
(a) dilly-dallying (b) procrastinating
(c) intelligent (d) conscientious

45. He appears to be reticent.
(a) expansive (b) jolly
(c) silent (d) withdrawn

46. He is always jovial.
(a) cheerful (b) callous
(c) garrulous (d) credulous

47. Mohan remains morose these days.
(a) introspective (b) generous
(c) chirpy (d) sullen

48. He was a reluctant laerner.
(a) enthusiastic (b) eager
(c) unwilling (d) fearful

49. Amit is optimistic about the prospects of his investments.
(a) pessimistic (b) uncaring
(c) carefree (d) sanguine

50. Sachin is very cooperative by nature.
(a) complaisant (b) covert
(c) complacent (d) conniving

PART-B: GENERAL KNOWLEDGE

51. What is the mass of a material, whose specific heat capacity is 400 J/(kg°C) for a rise in temperature from 15°C to 25°C, when heat received is 20 kJ?
(a) 0.1 kg (b) 1 kg
(c) 10 kg (d) 5 kg

52. The specific latent heat of vaporization of a substance is the quantity of heat needed to change unit mass from
(a) liquid to vapour with a change of temperature
(b) liquid to vapour without a change of temperature
(c) vapour to liquid without a change of temperature
(d) vapour to liquid with a change of temperature

53. Evaporation from the surface of a given liquid takes place more rapidly when
(a) the temperature is high and the surface area of the liquid is large
(b) the temperature is low and the surface area of the liquid is large
(c) the temperature is low and the surface area of the liquid is small
(d) the temperature is high and the surface area of the liquid is small

54. Which of the following statements correctly explains/ explain the existence of a positive force between two electric charges?
1. Both the charges are positive.
2. Both the charges are negative.
3. Both are charges are oppositely charged.
Select the correct answer using the code given below.
(a) 1 only (b) 2 only
(c) 1 and 2 only (d) 1, 2 and 3

55. An electric wire of resistance 50 ohm is cut into five equal wires. These wires are then connected in parallel. What is the equivalent resistance of this combination?
(a) 2 ohm (b) 10 ohm
(c) 0.5 ohm (d) 5 ohm

56. The electric field lines from an isolated positively charged conducting sphere are
(a) tangential to the conducting surface
(b) at right angles to the conducting surface and towards the centre of the sphere
(c) at any angle to the conducting surface
(d) at right angles to the conducting surface and outwards from the centre of the sphere

57. Which one of the following is ***not*** a solution?
(a) Alloy (b) Milk
(c) Air (d) Sugar

58. Refining of petroleum is carried out using which one of the following techniques?
(a) Evaporation (b) Fractional distillation
(c) Separating funnel (d) Sublimation

59. Which one of the following is a chemical change?
(a) Dissolving sugar in water
(b) Melting of ice
(c) Crystallization
(d) Milk turning sour

60. Which one of the following is the correct molecular formula of ammonium carbonate if the valency of ammonium ion is (+1) and carbonate anion is (–2)?
(a) $(NH_4)_2CO_3$ (b) $NH_4(CO_3)_2$
(c) $(NH_3)_2CO_3$ (d) NH_4CO_3

61. Which one of the following is a covalent compound?
(a) Calcium oxide (b) Sodium nitride
(c) Silicon carbide (d) Zinc sulphide

62. The mass number of argon is 40. Which one of the following statements is correct?
(a) The number of protons in argon is 22.
(b) The number of neutrons in argon is 18.
(c) The number of electrons in argon is 18.
(d) The sum of numbers of protons and electrons in argon is 40.

63. Which one of the following is the correct order of the valencies of elements Ne, Si, N and Mg?
(a) Ne < Mg < N < Si (b) Si < N < Mg < Ne
(c) Ne < N < Si < Mg (d) Mg < Ne < N < Si

64. The frequency of an alternating current is 3 Hz. It implies that
(a) there are 6 cycles/s (b) there are 3 cycles/s
(c) there are 2 cycles/s (d) there is only 1 cycle/s

65. Which one of the following correctly represents the SI unit of resistivity?
(a) Ω (b) Ω/m
(c) Ω cm (d) Ω m

66. What is the current required to light a 60 W incandescent bulb in a domestic supply of 240 V?
(a) 0.5 A (b) 0.25 A
(c) 1.0 A (d) 5.0 A

67. The magnetic field produced by a current-carrying straight wire at a point outside the wire depends
(a) inversely on the distance from it
(b) directly on the distance from it
(c) inversely at short distances and directly at large distances from it
(d) directly on the distance (at short distances) and inversely on the distance (at long distances) from it

68. What is the dimension of gravitational constant?
(a) ML^3T^{-2} (b) $M^{-1}L^3T^{-2}$
(c) $M^2L^{-2}T^{-2}$ (d) $M^2L^{-1}T^{-2}$

69. A ball is thrown vertically upward with a speed of 40 m/s. The time taken by the ball to reach the maximum height would be approximately
(a) 2 s (b) 3 s
(c) 4 s (d) 5 s

70. The time period of a 1 m long pendulum approximates to
(a) 6 s (b) 4 s
(c) 2 s (d) 1 s

71. Which of the following statements about living and non-living being is/are correct?
1. While living being can demonstrate growth and repair, non-living being cannot.
2. While living being demonstrates metabolic processes, non-living being does not.
Select the correct answer using the code given below.
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

72. Which one of the following plant plastids stores starch, oil and protein granules?
(a) Chloroplast (b) Leucoplast
(c) Chromoplast (d) Xanthoplast

73. Which one of the following statements about 'vacuoles' is ***not*** correct?
(a) In plants, there is a large central vacuole that may occupy 90% of total cell volume.
(b) In plant cells, vacuoles provide turgidity and rigidity.
(c) In Amoeba, vacuoles have role in nutrition.
(d) Vacuoles are absent in animal cells.

74. In aquatic plants, large air sacs give them buoyancy effects. These sacs are surrounded by which one of the following types of tissues?
(a) Parenchyma (b) Collenchyma
(c) Sclerenchyma (d) Complex tissue

75. Which one of the following belongs to 'Pisces'?
(a) Dogfish (b) Jellyfish
(c) Silverfish (d) Starfish

76. Which one of the following groups is called 'amphibians of plant kingdom'?
(a) Bryophytes (b) Thallophytes
(c) Pteridophytes (d) Gymnosperms

77. Which one of the following is caused by a bacterial pathogen?
(a) AIDS (b) Dengue fever
(c) COVID-19 (d) Typhoid fever

78. The twinkling of a star is due to the atmospheric
(a) diffraction of starlight
(b) reflection of starlight
(c) refraction of starlight
(d) dispersion of starlight

79. A mass M is dragged by a pulley on a horizontal plane by a force anti-parallel to its displacement. The work done in pulling the mass M is
(a) zero (b) positive
(c) infinite (d) negative

80. A 5 N force is defined when a mass of 10 kg is accelerated with
(a) $5.0\ cm/s^2$ (b) $0.5\ m/s^2$
(c) $0.5\ cm/s^2$ (d) $5.0\ m/s^2$

81. A boy of mass 52 kg jumps with a horizontal velocity of 2 m/s onto a stationary cart of mass 3 kg. The cart is fixed with frictionless wheels. Which one of the following would be the speed of the cart?
(a) 2.15 m/s (b) 1.89 m/s
(c) 1.51 m/s (d) 2.51 m/s

82. The energy possessed by a body due to its change in position or shape is called
(a) thermal energy (b) potential energy
(c) kinetic energy (d) electric energy

83. A sound wave has a frequency of 1 kHz and wavelength 50 cm. How long will it take to travel 1 km?
(a) 5 s (b) 4 s
(c) 3 s (d) 2 s

84. For an element with atomic number 35, which one of the following will be the correct number of electrons in its valence shell based on Bohr's model of an atom?
(a) 1 (b) 3
(c) 5 (d) 7

85. Which one of the following is ***not*** an example of a redox reaction?
(a) $AlCl_3 + 3H_2O \rightarrow Al(OH)_3 + 3HCl$
(b) $2NaH \rightarrow 2Na + H_2$
(c) $4Fe + 3O_2 \rightarrow 2Fe_2O_3$
(d) $CuSO_4 + Zn \rightarrow Cu + ZnSO_4$

86. Which one of the following allotropes of carbon is isomorphous with crystalline silicon?
(a) Coke (b) Diamond
(c) Graphite (d) Coal

87. Which one of the following is the colour of hydrogen gas?
(a) Light yellow (b) Orange
(c) Black (d) Colourless

88. Which one of the following is ***not*** a pigment?
(a) Zinc oxide (b) Chalk
(c) White lead (d) Silica

89. Which one of the following statements about fertilizers is ***not*** correct?
(a) Urea is a phosphorus-containing fertilizer.
(b) Application of fertilizer to the soil increases fertility of the soil.
(c) Urea can be prepared by action of ammonia and carbon dioxide under high pressure and at high temperature.
(d) Urea contains more nitrogen than other fertilizers.

90. Which one of the following statements is ***not*** correct?
(a) Most carbon compounds are good conductors of electricity.
(b) Bonding in organic compounds is covalent.
(c) Graphite is used as a lubricant.
(d) Diamond is an allotrope of carbon.

91. Which one of the following reactions is an example of decomposition reaction?

(a) $CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$

(b) $2AgCl(s) \xrightarrow{\text{Sunlight}} 2Ag(s) + Cl_2(g)$

(c) $CuO + H_2 \xrightarrow{\text{Heat}} Cu + H_2O$

(d) $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

92. Which one of the following is the mechanism of action of oral contraceptive pills?

(a) They kill the egg.

(b) They kill the sperm.

(c) They kill the zygote.

(d) They inhibit the release of egg.

93. Which one of the following plants has unisexual flowers?

(a) Papaya (b) Hibiscus

(c) Mustard (d) Sunflower

94. A cell is unable to synthesize lipids. Which of its cell organelles might be defective?

(a) Smooth endoplasmic reticulum

(b) Golgi bodies

(c) Lysosomes

(d) Mitochondria

95. All objects experience a buoyancy when they are immersed in a fluid. Buoyancy is

(a) a downward force (b) a downward pressure

(c) an upward force (d) an upward pressure

96. According to Fleming's right-hand rule, if the forefinger indicates the direction of magnetic field and thumb shows the direction of motion of conductor, then the stretched middle finger will predict the direction of

(a) force acting on the conductor

(b) electric field

(c) induced current

(d) current

97. Two resistors R_1 and R_2 arranged in parallel combination in an electrical closed circuit are made of the same material and of same thickness. If the length of R_2 is twice the length of R_1, then the total resistance R satisfies

(a) $3R = 2R_1$ (b) $3R = 2R_2$

(c) $2R = 3R_1$ (d) $2R = 3R_2$

98. What is the magnification produced by a concave lens of foacl length 10 cm, when an image is formed at a distance of 5 cm from the lens?

(a) 2.0 (b) 1.0

(c) 0.5 (d) 0.33

99. A wooden box of mass 2 kg and dimensions (30 cm × 15 cm × 10 cm) is placed on a table with sides 30 cm and 10 cm touching the tabletop. Which one of the following is the approximate pressure exerted on the table?

(a) $111.1\ N/m^2$ (b) $222.2\ N/m^2$

(c) $333.3\ N/m^2$ (d) $666.6\ N/m^2$

100. Why are the tyres of aircrafts made of conducting rubber?

1. So that the charge accumulated on the aircraft in flight, by rubbing the air, can easily be transferred to ground on landing.
2. So that the charge accumulated due to the operation of various electronic equipments in the aircraft in flight can easily be transferred to ground on landing.

Select the correct answer using the code given below.

(a) 1 only (b) 2 only

(c) Both 1 and 2 (d) Neither 1 nor 2

101. *Arthashastra*, the classical work of Indian political thought, focuses primarily on

(a) economy (b) culture

(c) statecraft (d) monarchy

102. When did *Charaka Samhita* originate?

(a) 6th Century BCE (b) 3rd or 2nd Century BCE

(c) 4th Century BCE (d) 5th Century BCE

103. Early Buddhist sculptors did not show Buddha in human form. Through which of the following symbols was Buddha's presence shown by the early sculptors?

(a) Empty Seat and Stupa only

(b) Wheel and Tree only

(c) Wheel, Tree and Stupa only

(d) Empty Seat, Wheel, Tree and Stupa

104. The Parliament of India is primarily based on the model of

(a) German Parliament (b) British Parliament

(c) American Parliament (d) French Parliament

105. Who among the following had the shortest span in office as the Prime Minister of India?

(a) Lal Bahadur Shastri (b) Chaudhary Charan Singh

(c) Chandra Shekhar (d) H. D. Deva Gowda

106. Which one of the following does ***not*** fall under the jurisdiction of the apex court of India?

(a) Original Jurisdiction

(b) Appellate Jurisdiction

(c) Collegiate Jurisdiction

(d) Advisory Jurisdiction

107. According to the Indian Meteorological Department, which of the following is/are the feature/features of cloudburst?

1. Heavy precipitation in short period of time in a limited geographical area
2. It occurs generally during monsoon period and triggers flash flood and landslides

Select the correct answer using the code given below.

(a) 1 only (b) 2 only

(c) Both 1 and 2 (d) Neither 1 nor 2

108. In a group discussion on shape and size of the Earth, three students stated the following points:

1. Student 1 : The shape of the Earth is basically an oblate spheroid.
2. Student 2 : The polar diameter of the Earth is more than the equatorial diameter.

3. Student 3 : Bulge along the equatorial region is due to revolution of the Earth.

Who among the above students is/are correct?

(a) Student 1 only
(b) Student 1 and Student 2 only
(c) Student 2 and Student 3 only
(d) Student 1, Student 2 and Student 3

109. While watching news, you hear about a place, of which you had never heard earlier. You want to know more about the place and you want to locate it on the map. Which of the following is/are required for you to be able to locate the place on the map?

(a) Only latitude of the place
(b) Only longitude of the place
(c) Both longitude and latitude of the place
(d) Latitude, longitude and altitude of the place

110. Which one of the following statements with respect to Global Positioning System (GPS) is ***not*** correct?

(a) It is based on network of satellites orbiting above the Earth.
(b) It is based on the system of triangulation.
(c) GPS receivers provide location in terms of latitude, longitude and altitude.
(d) It provides information exclusively for military operations.

111. Which one of the following is ***not*** a Constitutional Commission of India?

(a) The National Commission for Scheduled Castes
(b) The National Commission for Schedule Tribes
(c) The National Commission for Backward Classes
(d) The National Commission for Women

112. Which Chinese traveller in ancient India wrote the diary called 'Records of the Travels to Middle India'?

(a) Wang Xuance (b) Xuanzang
(c) Yijing (d) Li Yibiao

113. The elections to the Lower House of the Parliament of India, held in 2019, constituted the

(a) 14th Lok Sabha (b) 15th Lok Sabha
(c) 16th Lok Sabha (d) 17th Lok Sabha

114. Panchayati Raj Institutions are primarily the institutions of

(a) Popular Government (b) Self-Government
(c) Federal Government (d) Quasi-Government

115. Which of the following is/are the right/rights mentioned in the 'American Declaration of Independence'?

1. Life
2. Liberty
3. Pursuit of Happiness
4. Fraternity

Select the correct answer using the code given below.

(a) 1 only (b) 1 and 2 only
(c) 1, 2 and 3 (d) 2, 3 and 4

116. Who among the following American Presidents described democracy as "Government of the People, for the People and by the People"?

(a) Abraham Lincoln (b) Thomas Jefferson
(c) George Washington (d) John F. Kennedy

117. Inhabitants are unaware of the speed of rotation of the planet Earth because

1. the angular velocity is constant for each place on the Earth's surface
2. the atmosphere rotates with the Earth
3. there are no nearby objects, either stationary or moving at a rate different from that of the Earth

Which of the above is/are the correct explanation(s)?

(a) 1 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3

118. While travelling to a hilly region, you notice a massive boulder, which was loosened by heavy rains and moved downhill. This has resulted due to which of the following processes?

1. Mass wasting
2. Erosion
3. Weathering

Select the correct answer using the code given below.

(a) 1 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3

119. Which of the following statements in respect of landslides are correct?

1. These occur only on gentle slopes during rain.
2. They generally occur in clay-rich soil.
3. Earthquakes trigger landslides.

Select the correct answer using the code given below.

(a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

120. Consider the following features about a geographical phenomenon :

1. Torrents of snow and ice roaring down a steep mountain side
2. It is hazardous to skiers and mountaineers
3. It involves a mix of falling, rolling, sliding and flowing of materials

Which of the following phenomena can be identified with the above features?

(a) Slump and earthflow (b) Avalanche
(c) Landslide (d) Rockslide

121. The real beginning of western education in India can be dated from

(a) the Charter Act of 1813
(b) the Charter Act of 1793
(c) the Sarda Act of 1929
(d) the Macaulay's Minute on Indian Education, 1835

122. The term 'Industrial Revolution' was first used by

(a) J. A. Blanqui (b) T. S. Ashton
(c) Arnold Toynbee (d) R. H. Tawney

123. The Khudai Khidmatgar (Servants of the God) was organized by
(a) Mahatma Gandhi (b) Khan Abdul Ghaffar Khan
(c) M. A. Jinnah (d) M. M. Malaviya

124. The Mahad Satyagraha of 1927 was organized by
(a) B. R. Ambedkar (b) Mahatma Gandhi
(c) S. C. Bose (d) Lokmanya Tilak

125. The Satyashodhak Samaj (Truth-Seeking Society) was set up by
(a) Vinoba Bhave (b) Jyotiba Phule
(c) B. R. Ambedkar (d) C. Rajagopalachari

126. The 13th Century text *Lekhapaddhati* gives us information on which one of the following topics?
(a) Art of writing (b) Essay writing
(c) Legal document (d) Epigraphic style

127. Nkrumah was one of the five leaders, who comprised the core of the Non-aligned Movement (NAM). He was the leader of which country in Africa?
(a) Nigeria (b) Kenya
(c) Uganda (d) Ghana

128. The idea of Planning in Independent India was drawn from
(a) the Bombay Plan
(b) the demand made by peasants
(c) the demand made by workers' unions
(d) the Gandhian vision of India's future

129. Nisarga, Gati, Nivar, Tauktae and Yaas are names of
(a) new fighter aircrafts (b) tourist places
(c) weather stations (d) cyclones

130. Which one of the following States/UTs was connected with the Indian Railways network in the year 2021?
(a) Mizoram (b) Ladakh
(c) Manipur (d) Sikkim

131. The forests of Uttarakhand Kullu Valley in Himachal Pradesh and Dzukou Valley in Nagaland and Manipur were in the news on account of which one of the following reasons?
(a) Deforestation
(b) Forest fire
(c) Poaching of wild animals
(d) Illegal mining

132. Which one of the following is correct in respect of total number of States and Union Territories in India?
(a) 28 States and 8 Union Territories
(b) 27 States and 9 Union Territories
(c) 30 States and 6 Union Territories
(d) 29 States and 7 Union Territories

133. Snow, sleet and hail are the forms of
(a) precipitation (b) condensation
(c) transpiration (d) evaporation

134. Which one of the following is likely to be the most prevalent form of weathering in hot-tropical desert areas?
(a) Mechanical (b) Chemical
(c) Biological (d) Leaching

135. Which one of the following cities was the first to attain the status of a 'megacity'?
(a) London (b) Paris
(c) New York (d) Washington

136. In India, rigid and stable elevated lands, denuded rocks and series of scarps are the features of which of the following?
(a) Northern mountains (b) Peninsular plateau
(c) Northern plains (d) Coastal plains

137. A person has visited a region in India and found trees, such as Khair, Neem, Khejri and Palas. Which one of the following regions is she/he expected to have visited?
(a) Malabar Coast (b) Garo Hills
(c) Sunderban Delta (d) Desert Region

138. Consider the following statements :
1. Rocks do not remain in their original form for long and undergo transformation.
2. Transformation of rocks is caused by weathering, erosion and metamorphic action.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

139. Weathering, mass wasting, erosion and transportation are indicators of which one of the following processes?
(a) Denudation (b) Endogenetic process
(c) Diastrophism (d) Mountain building

140. If you want to observe moraines, eskers and outwash plains, which one of the following Union Territories you may have to visit?
(a) Andaman and Nicobar Islands
(b) Lakshadweep
(c) Puducherry
(d) Ladakh

141. Legendary Kathak dancer Pandit Birju Maharaj died recently. He was the doyen of which one of the following Gharanas of Kathak?
(a) Jaipur (b) Raigarh
(c) Lucknow (d) Banaras

142. In a first, India is to export BrahMos missile to
(a) Bhutan (b) Philippines
(c) Maldives (d) Nepal

143. Who among the following is the Head of the Committee appointed by the Supreme Court of India to enquire into the circumstances that led to the Prime Minister of India's convoy being stuck for several minutes on a flyover in Punjab recently?
(a) Justice Indu Malhotra
(b) Justice Ashok Bhushan
(c) Justice Navin Sinha
(d) Justice Rohinton Fali Nariman

144. Who among the following retired from test cricket by bagging a wicket on the last ball of his career?
(a) AB de Villiers (b) Michael Hussey
(c) Quinton de Kock (d) Ross Taylor

145. Who among the following is appointed as the tenth Chairman of the Indian Space Research Organization (ISRO) recently?
(a) A. S. Kiran Kumar (b) K. Sivan
(c) K. Radhakrishnan (d) S. Somanath

146. According to the Forest Survey Report, 2021, area-wise which one of the following States has the largest forest cover in India?
(a) Odisha (b) Madhya Pradesh
(c) Arunachal Pradesh (d) Chhattisgarh

147. Who among the following is the Chairperson of the Goods and Services Tax Council?
(a) The Prime Minister of India
(b) The Union Finance Minister
(c) The Speaker of the Lok Sabha
(d) The President of India

148. The International Union for Conservation of Nature (IUCN) has recently categorized the Red Sanders (Red Sandalwood) into
(a) deficient category
(b) endangered category
(c) near-threatened category
(d) critically endangered category

149. The Government of India has decided to observe 'Veer Baal Diwas' on
(a) 6th October (b) 26th November
(c) 26th December (d) 6th December

150. On 14th January, 2022, which one of the following ministries has organized a global Surya Namaskar Demonstration programme?
(a) The Ministry of Culture
(b) The Ministry of AYUSH
(c) The Ministry of Health and Family Welfare
(d) The Ministry of Tourism

HINTS & SOLUTIONS

GENERAL ABILITY

PART-A: ENGLISH

1. (c) **"have"** should be replaced by **"has"** and **"their"** should be replaced by **"its"** to make the sentence grammatically correct, Because, "a company of five thousand soldiers" is a collective noun, hence singular verb and pronoun is used accordingly…i.e. "has" and "its".
2. (c) instead of pronoun **"their",** pronoun **"his"** should be used to make the sentence grammatically correct,

"every" is always used with a singular noun form and therefore with a singular verb form and pronoun accordingly in English.

3. (a) **"reflects"** should be replaced by **"reflect"** to make the sentence grammatically correct.
4. (d) no error.
5. (d) no error**.**
6. (c) **"it's"** should be replaced by **"its"** to make the sentence grammatically correct**.** "It's" is a contraction and should be used where a sentence would normally read "it is." The apostrophe indicates that part of a word has been removed. "Its" with no apostrophe, on the other hand, is the possessive word, like "his" and "her," for nouns without gender.
7. (a) **"the"** should be added to the sentence after **"considered",** to make the sentence grammatically correct.
8. (b) **"ones"** should be replaced by **"one's**", as The only times "ones" has no apostrophe are when it is being used to mean "examples" or "people" as in "ripe ones" or "loved ones," or in the informal arithmetical expression "the ones column. " Whereas " one's" is a possessive pronoun, which fits suitably in the given sentence.
9. (d) no error.
10. (a) article **"an"** should replace **"a"** to make the sentence grammatically meaningful because we use an with vowel sounds.
11. (a) this idiom is usually used in negative statements to mean that someone should not depend on something hoped for until he or she knows for certain that it will happen, however option (a) **"confident of success"** is the closest to the meaning.
12. (b) the idiom mean- an attractive but inessential addition or enhancement**;** hence option (b) is the closest to the meaning.
13. (d) the idiom mean- **used to say that it is better to fix a problem when it is small than to wait and let it become a bigger problem.** Hence option (d) is the closest in the meaning.
14. (c) the idiom mean- **in a state of total confusion or disarray**. Hence option (c) is the closest in the meaning.
15. (a) the idiom mean- **To talk (to someone) very rapidly, hurriedly, and/or energetically**. Hence option (a) is the closest in the meaning.
16. (d) the idiom mean- **slightly unwell or in low spirits.** Hence option (d) is the closest in the meaning.
17. (c) the idiom mean- **avoid making a decision or choice**, Hence option (c) is the closest in the meaning.
18. (c) the idiom mean- **very rarely**, Hence option (c) is the closest in the meaning.
19. (d) the idiom mean- **under all circumstances, no matter how difficult**, Hence option (d) is the closest in the meaning.
20. (a) the idiom mean- **fundamentally different or incompatible**, Hence option (a) is the closest in the meaning.
21. (b) **QSPR is the correct sequence. S coherently continues after Q evident from "with", while P follows S evident from "but" as it continues to provide further information.**
    i.e. *There are many ways of dealing with intransigent customers but perhaps the best way is to agree with them without excessive argumentation.*
22. (d) **QPSR is the correct sequence. Q is an appropriate starting sentence after the rearrangement as it begins to talk about a topic, followed by P, S and R.**
    i.e. *India achieved remarkable economic development in the years following the landmark reforms inaugurated via liberalization in the year 1991.*
23. (a) **SPQR is the correct sequence. P continues after S, evident from "was" in P, further followed by Q and R in this order as it makes a coherent and meaningful passage.**
    i.e. *the greatest moment in Indian Olympic history was the victory secured by the women's hockey team in the arena of sport, perhaps against Australia in the Tokyo Olympics.*
24. (c) **SPRQ is the correct sequence. S when followed by P makes a coherent pair, the presence of "which" in R makes it evident that it follows P, and Q being the last sentence after the rearrangement.**
    i.e. *economic progress is determined in terms of GDP and GNP which are the two major determinants for gauging the success of a nation.*
25. (b) **RPSQ is the correct sequence. i.e**. *They can twist and shake their wobbly heads with the aplomb of a stage artist, mesmerizing the gullible into believing that they are not men of straw.*
26. (d) **RPQS is the correct sequence. i.e**. *On the one hand there is the immense beauty of its rain-soaked verdure and on the other there are the artifacts of its visible modernity.*
27. (a) **QRPS is the correct sequence. i.e**. *the causes of extreme poverty are often rooted in the inequalities of social systems.*
28. (a) **RPQS is the correct sequence. i.e**. *you must judge a person by the way he behaves and not by the way he looks.*
29. (c) **RSQP is the correct sequence. i.e**. *whenever in doubt always opt for the options that causes the least discomfort to the greatest number of people.*
30. (b) **SRQP is the correct sequence. i.e**. *faith and belief are our greatest defense against the despondency brought by bad times.*
31. (b) **refined** is correct antonym. **crude-** offensively coarse or rude. **Coarse**- rude or vulgar. **Eager**- keenly expectant or interested **Balanced**- taking everything into account; fairly judged or presented. **Refined**- elegant and cultured in appearance, manner, or taste.
32. (a) **diffidence** is correct antonym. **Diffidence-** modesty or shyness resulting from a lack of self-confidence. **Steadfastness**- the quality of being resolutely or dutifully firm and unwavering
33. (d) **dishonesty** is correct antonym. **Integrity-** the quality of being honest and having strong moral principles.

34. (c) **malevolent** is correct antonym. **Benevolent-** well meaning and kindly. **Muddled-** not arranged in order; untidy. **Malevolent-** having or showing a wish to do evil to others. **Ambivalent-** having mixed feelings or contradictory ideas about something or someone.
35. (a) **unstylish** is correct antonym. **Sartorial-** relating to tailoring, clothes, or style of dress.
36. (d) **fake** is correct antonym.
37. (b) **drought** is correct antonym **Deluge-** an overwhelming amount of something
38. (c) **apathy** is correct antonym,; meaning- lack of interest, enthusiasm, or concern
39. (b) **dullness** is correct antonym, remaining options seem to synonyms in varying degree of **Perspicacity; Perspicacity**- the quality of having ready insight into things; shrewdness.
40. (d) **dislike** is correct antonym **Penchant-** taste, liking or inclination.
41. (b) **Praise** is the correct synonym.
42. (a) **Praiseworthy** is the correct synonym. **Laudable-** deserving praise and commendation
43. (a) **Capable** is the correct synonym.
44. (d) **Conscientious** is the correct synonym. **Diligent-** having or showing care and conscientiousness in one's work or duties **Conscientious-** wishing to do one's work or duty well and thoroughly
45. (d) **withdrawn** is the correct synonym. **expansive-** covering a wide area in terms of space or scope; extensive **Reticent-** not revealing one's thoughts or feelings readily
46. (a) **cheerful** is the correct synonym. **Jovial-** cheerful and friendly.
47. (d) **sullen** is the correct synonym. **Morose-** sullen and ill-tempered.
48. (c) **unwilling** is the correct synonym. **Reluctant-** unwilling and hesitant; disinclined.
49. (d) **sanguine** is the correct synonym; meaning- optimistic or positive, especially in an apparently bad or difficult situation.
50. (a) **complaisant** is the correct synonym; meaning- willing to please others or to accept what they do or say without protest. **Covert-** not openly acknowledged or displayed **Complacent-** showing smug or uncritical satisfaction with oneself or one's achievements. **Conniving-** given to or involved in conspiring to do something immoral, illegal, or harmful.

PART-B: GENERAL KNOWLEDGE

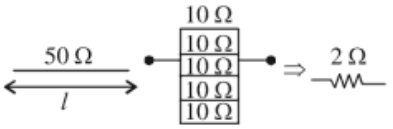
51. (d) $\Delta Q = MS\Delta T$

$$\Rightarrow \quad m = \frac{\Delta Q}{S\Delta T}$$

$$\Rightarrow m = \frac{20,000}{400 \times 10}$$

$$\Rightarrow m = 5\,kg$$

52. (b) Latent heat of veporization is the amount of heat required by a substance to change unit mass from liquid to vapour without a change of temperature.
53. (a) Rate of evaporation
$\propto$ surface area
$\propto$ Temprature
54. (NONE)
Incorrect data/or some data is missing.
55. (a)

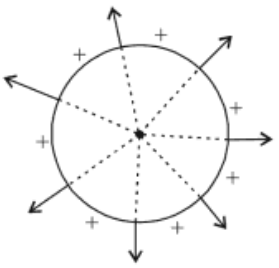


as $R \alpha l$
So, all the five part will have 10 Q resistance.

$$\text{So, } \frac{1}{Req} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$$

$$Req = \frac{10}{5} = 2\Omega$$

56. (d)



We can clearly sec from figure electric line of field is 1r to conducting surface and directed outward.
57. (c) Alloy - solid solution
Milk - colloidal solution
Air - mixture
Sugar solution -true solution
58. (b) fractional distillation : It is a process used for separating a mixture of two or more miscible liquid whose boiling point difference is very less. This method is employed in refining of petroleum.
59. (d) Milk turning sour is an example of chemical change as there is a change in chemical composition of milk in which lactose sugar of milk changes to lactic acid.
Dissolution of sugar in water melting of ice and crystallization are the physical changes.
60. (a)

	NH_4^+	CO_3^{2-}
Valency	+1	–2
Chemical formula	$(NH_4)_2CO_3$	

61. (c) Calcium oxide (CaO) , Calcium nitride (Ca_3N) , Zinc sulphide (ZnS) are ionic compounds
Silicon carbide (SiC) is a covalent compound as this compound is linked by strong covalent bonding, Its structure is similar to diamond.It is vary hard to break.

62. (c) Argon is monatomic noble gas.
Atomic number of Argon is 18.
No.of proton of Ar = No. Of electron = 18
Number of neutron = Mass number - number of proton
40 – 18 = 22

63. (a) correct order of valency of the given element is
Ne < Mg < N < Si
0 2 3 4

64. (b) |Hz = | Cycle | sec
So, 3Hz = 3 cycles /sec

65. (d) $R = \frac{Pl}{A}$

$$P = \frac{RA}{l} \Rightarrow \text{unit of} = \frac{\text{ohm m}^2}{\text{m}} = \text{ohm} - \text{m}$$

So unit of resistivity
will be Ω m.

66. (b) P = VI

$$I = \frac{P}{V} = \frac{60}{240} = 0.25A$$

67. (a) By Biot - Savart's law

$$B = \frac{\mu_0 i}{2\pi r}$$

$$\text{So, } B\alpha\frac{1}{\lambda}$$

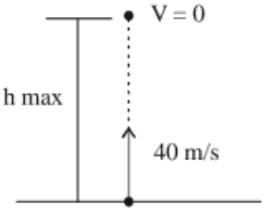
68. (b) $F = G\frac{m_1 m_2}{r^2}$

$$[F] = \frac{[G][m_1 m_2]}{[t^2]}$$

$$[G] = \frac{[F][r^2]}{[m_1][m_2]} = \frac{MLT^{-2}L^2}{M^2}$$

$= M^{-1} L^3 T^{-2}$

69. (c)



at h max, v = 0
Now, V = u + a t ⇒ 0 = 40 – gt

$\Rightarrow gt = 40 \quad \Rightarrow t\ \frac{40}{g}$

$$\Rightarrow t = \frac{40}{10} = 4 \text{ sec}$$

70. (c) $T = 2\sqrt{\pi}\sqrt{\frac{L}{g}} = 2\pi\sqrt{\frac{1}{10}}$

≃ 2 seconds

71. (c) Living-organisms are able to perform growth and repair mechanism whereas non-living organism could not able to do this. Also, metabolism is a defining characteristic of all living organism only.

72. (b) **Leucoplast** is a type of plastid that stores starch, oil and protein granules

73. (d) Vacuoles are present in both animal and plant cells.

74. (a) Some aquatic plants have large air cavities in the parenchyma. This type of parenchyma is called **aerenchyma**. It helps in buoyancy.

75. (a) Silverfish is a insect, starfish is an Echinodermata. Jellyfish and sea jellies are the informal common names given to the medusa-phase of certain gelatinous members of the subphylum Medusozoa, a major part of the phylum Cnidaria.

76. (a) Bryophytes is also known as amphibians of plant kingdom because they require water for fertilization.

77. **(d)** Typhoid is a life-threatening illness caused by **Salmonella Typhi bacteria**. Paratyphoid fever is a life-threatening illness caused by Salmonella Paratyphi bacteria. AIDS, Dengue Fever And COVID-19 are caused by virus.

78. (c) The twinkling of a star is due to atmospheric refraction of starlight. The Starlight, on entering the earth's athmosphere, undergoes refraction continuously before it reaches the earth, but path of light reepson changing slightly due to changing earth atmosphere so amount of light entering the eye changes, which cause star to appear sometime bright and some time dark

79. (b) $w = \vec{F} \cdot \vec{S}$
$w = FS \cos\theta$
Here $\vec{F}$ is antiparallel to $\vec{S}$
So θ = 180° and cos 180 = –1
So, work done will be w = – FS
i.e work is negative.

80. (b) $a = \frac{F}{m}$

$$\Rightarrow \quad a = \frac{5}{10} = 0.5\,\text{m/s}^2$$

81. (b) By law of conservation of linear momentum $\vec{P}_i = \vec{P}_f$

$$M_{boy} V_{boy} + M_{cart} V_{cart} = (M_{boy} + M_{cart})V^1$$

[∵ Boy jumped into cart, the final velocity (Vl) of the boy will be equal to that of the cart]

$52 \times 2 + 3 \times 0 = (52 + 3)\, V^1$

$$\Rightarrow \frac{104}{55} = V^1$$

⇒ V1 = 1.89 m/s

82. (b) Potential energy arises olve to change in shape size and position

83. (d) $V\text{sound} = \lambda f = 0.5 \times 1000 = 500\ \text{m/s}$

$$\text{Required time} = \frac{1\text{km}}{500\text{m/s}} = \frac{1000\text{m}}{500\text{m/s}} = 2\sec$$

84. (d) Atomic number 35 belongs to halogen hence, number of valence electron will be based on Bohr's atomic model.

85. (a) The reaction in which oxidation and reduction takes place simultaneously are known as redox reaction.
In reaction (a) there is no change in the oxidation number of any element hence it is not a redox reaction.

86. (b) Three important allotropes of carbon are graphite, diamond, and fullerene. Crystal structure of diamond is isomorphous with silicon.

87. (d) Hydrogen (H_2) is a nontoxic, nonmetallic, odorless, tasteless, colorless, and highly combustible diatomic gas.

88. (d) silica, is also known as silicon dioxide. It is compound of the two most abundant elements in Earth's crust, silicon and oxygen, SiO_2. It is most commonly found in nature as quartz.
Zinc oxide is a white solid used as a pigment. Chalk is white solid made up of $CaCO_3$. Whitw lead is also a pigment containing mixture of lead carbonate and lead hydroxide ($PbCO_3.Pb(OH)_2$)

89. (a) Urea is a nitrogen containg fertilizer. It contains more percentage of nitrogen than other fertilizers. The main function of Urea fertilizer is to **supplement nitrogen to the plants**.

90. (a) Carbon compounds are poor conductor of electricity as they do not have the presence of free electrons.

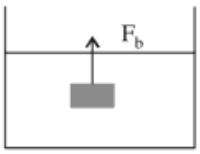
91. (b) A decomposition reaction is **a chemical reaction in which one reactant breaks two from two or more products. Decomposition reactions require** energy . There are **mainly three** types of decomposition reactions: Thermal decomposition reactions; Elctrolytic decomposition reactions; Photo decomposition reactions.
Reaction (b) is an example of photodecomposition reaction.

92. (d) The mechanism of action of hormonal contraception includes: Inhibition of ovulation(inhibits the relase of egg).

93. (a) Papaya has unisexual flowers, male flowers, and female flowers are on separate plants.

94. (a) Smooth endoplasmic reticulum is involved in lipid synthesis.

95. (c) Buoyancy is an upward force which acts on an object immersed in liquid. Its value is equal to weight of liquid displaced by object.



96. (c) The middle finger represent direction of induced current.

97. (a) As $lR_2 = 2l_{R1}$

So, $R_2 = 2R_1$ [Q $R = \frac{Pl}{A} \Rightarrow R\,\alpha\,1$]

$$\text{So, } Req = \frac{R_1R_2}{R_1+R_2} = \frac{R_1(2R_1)}{R_1+2R_1} = \frac{2R_1^2}{3R1} = \frac{2R_1}{3}$$

Thus, 3 Req = 2R1
i.e. $3R = 2R_1$

98. (c) By lens formula

$$\frac{1}{V} - \frac{1}{u} = \frac{1}{f}$$

$$\Rightarrow \frac{1}{-5} - \frac{1}{u} = \frac{1}{-10}$$ [$\because$ concave lens always form image on same side as that of object. so v is –ve]

$$\Rightarrow \frac{1}{u} - \frac{1}{10} = \frac{1}{5}$$

$$\Rightarrow \frac{1}{u} = \frac{1-2}{10}$$

$$\Rightarrow \frac{1}{u} = \frac{1}{10}$$

$\Rightarrow u = -10$

$$\text{So, } m = \frac{v}{u} = \frac{-5}{-10} = \frac{1}{2} = 0.5$$

99. (d) $$P = \frac{F}{\text{Area of contack}} \text{ or } \frac{F}{A\perp}$$

$$\text{So, } P = \frac{mg}{A\perp} = \frac{2\times10}{30\times10\times10^{-4}} = 666.6\ N/M^2$$

100. (a) During take of for landing the type of aircrafts get charged due to friction between types and ground. It types are slightly conducting, the charges developed on the tyres will not stay one them and find its way to earth.

101. (c) The Arthashastra is an Ancient Indian Sanskrit treatise on statecraft, political science, economic policy and military strategy.

102. (b) Acharya Charak was born around 300 BC and was a key contributor to Ayurveda's ancient art and science, medicine, and lifestyle philosophy that was developed in Ancient India. Charaka lived between AD 150-200 and 100 BC. He is well known as the editor of the medical treatise Charaka Samhita, one of the basic books of traditional Indian medicine and Ayurveda, which is contained in the Brhat-Trayi.

103. (d) Early Buddhist art did not show the Buddha in human form. In relief sculptures at early stupa sites, his presence is indicated by symbols such as the lotus (signifying

purity), the eight-spoked wheel (emblem of the Buddha's law), the parasol (ancient symbol of royalty), and a footprint (the Buddha's presence).

104. (b) The Parliament of India is primarily based on the model of British Parliament

105. (b) Chaudhary Charan Singh (23 December 1902 - 29 May 1987) served as the 5th Prime Minister of India between 28 July 1979 and 14 January 1980.

106. (c) Collegiate Jurisdiction does not fall under the jurisdiction of the apex court of India.

107. (c) A cloudburst is an extreme amount of precipitation in a short period of time, sometimes accompanied by hail and thunder, which is capable of creating flood conditions. Cloudbursts can quickly dump large amounts of water, e.g. 25 mm of precipitation corresponds to 25,000 metric tons per square kilometre (1 inch corresponds to 72,300 short tons over one square mile). However, cloudbursts are infrequent as they occur only via orographic lift or occasionally when a warm air parcel mixes with cooler air, resulting in sudden condensation.

108. (a) Earth is not a perfect sphere. Its shape is an oblate spheroid. This just means that it flattens at the poles and widens out at the equator. Earth bulges at the equator because of the centrifugal force during rotation.

109. (c) Both longitude and latitude of the place helps people locate places on the map. On small-scale maps, the grid is often made up of latitude and longitude lines. Latitude lines run east-west around the globe, parallel to the Equator, an imaginary line that circles the middle of the Earth. Longitude lines run north-south, from pole to pole.

110. (d) The Global Positioning System (GPS) is a satellite constellation supporting highly accurate positioning, navigation and timing (PNT) measurements worldwide. As one of the first satellite positioning systems, GPS has become integral to work done worldwide, including precision agriculture, autonomous vehicles, marine or aerial surveying and defense applications.

111. (d) The National Commission for Women (NCW) is the statutory body of the Government of India, generally concerned with advising the government on all policy matters affecting women. It was established on 31 January 1992 under the provisions of the Indian Constitution, as defined in the 1990 National Commission for Women Act.

112. (b) Hiuen Tsang or Xuanzang was a chinese buddhist monk who travelled over land from China to India during the reign of King Harsha Vardhan to obtain Buddhist scriptures. He wrote 'Records of the Travel to Middle India'.

113. (d) The 17th Lok Sabha was formed by the members elected in the 2019 Indian general election. Elections, all across India, were conducted in seven phases from 11 April 2019 to 19 May 2019 by the Election Commission of India.

114. (b) Panchayati Raj (Council of five officials) is the system of local self-government of villages in rural India as opposed to urban and suburban municipalities.

115. (c) Jefferson identified three natural rights in the Declaration of Independence: "Life, Liberty, and the Pursuit of Happiness."

116. (a) 'Democracy is a government of the people, by the people and for the people' is said by Abraham Lincoln. He was the 16th president of the United States. He took the charge as president from March 4, 1861 to April 15, 1865. He defined his own definition for democracy.

117. (d) Earth spins at a constant speed (i.e., there are no changes in its rotational speed) and we, humans that live on the surface, move along with it at the same speed, which is why we don't feel any direct, physical effects of Earth's spin. That's the same reason why, when we jump in the air, we land in the same (original) spot.

118. (d) **Mass wasting** is the movement of rock and soil down slope under the influence of gravity. Rock falls, slumps, and debris flows are all examples of mass wasting. Often lubricated by rainfall or agitated by seismic activity, these events may occur very rapidly and move as a flow.
Erosion is the geological process in which earthen materials are worn away and transported by natural forces such as wind or water. A similar process, weathering, breaks down or dissolves rock, but does not involve movement.
Weathering is the breaking down or dissolving of rocks and minerals on Earths surface. Once a rock has been broken down, a process called erosion transports the bits of rock and minerals away. Water, acids, salt, plants, animals, and changes in temperature are all agents of weathering and erosion.

119. (c) A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. Landslides are a type of "mass wasting," which denotes any down-slope movement of soil and rock under the direct influence of gravity. Slope movement occurs when forces acting down-slope (mainly due to gravity) exceed the strength of the earth materials that compose the slope. Causes include factors that increase the effects of down-slope forces and factors that contribute to low or reduced strength. Landslides can be initiated in slopes already on the verge of movement by rainfall, snowmelt, changes in water level, stream erosion, changes in ground water, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors. Earthquake shaking and other factors can also induce landslides underwater. These landslides are called submarine landslides. Submarine landslides sometimes cause tsunamis that damage coastal areas.

120. (b) An avalanche is a rapid flow of snow down a slope, such as a hill or mountain. Avalanches can be set off spontaneously, by such factors as increased precipitation or snowpack weakening, or by external means such as humans, animals, and earthquakes. Primarily composed of flowing snow and air, large avalanches have the capability to capture and move ice, rocks, and trees.

121. (d) On 2 February 1835, British historian and politician Thomas Babington Macaulay presented his 'Minute on

Indian Education' that sought to establish the need to impart English education to Indian 'natives'. Hence, began the beginning of the western education system in India.

122. (c) The term "Industrial Revolution" was first used by the French writers. But it was popularised by the English economic historians 'Arnold Toynbee' to denote Britain's economic developments that took place between 1760 to 1840.

123. (b) The khudai khidmatgar movement was led by Abdul Ghaffar Khan, known locally as Bacha Khan, Badshah Khan, or Sarhadi Gandhi. It gradually became more political as its members were being targeted by the British Raj. By 1929 its leadership was exiled from the province and large numbers were arrested.

124. (a) Mahad Satyagraha was a satyagraha led by B. R. Ambedkar on 20 March 1927 to allow untouchables to use water in a public tank in Mahad (currently in Raigad district), Maharashtra, India.

125. (b) Satyashodhak Samaj (Truth-seekers' Society) was a social reform society founded by Jyotiba Phule in Pune, Maharashtra, on 24 September 1873. It espoused a mission of education and increased social rights and political access for underprivileged groups, focused especially on women, Shudras, and Dalits, in Maharashtra.

126. (c) The Lekhapaddhati , also known as Lekhapañcasika, is a collection of Sanskrit documents written between the 8th and 15th centuries during the Chaulukya rule in Gujarat, India. It was later also composed in Prakrit and it contained rules for drafting variety of documents like documents related to land grants, treaties between the rulers and rule of administration. The collection of these documents served as a repository used mainly for administrative purposes by the court officials and for private correspondence.

127. (d) In 1961, drawing on the principles agreed at the Bandung Conference of 1955, the Non-Aligned Movement was formally established in Belgrade, Yugoslavia, through an initiative of Yugoslav President Josip Broz Tito, Indian Prime Minister Jawaharlal Nehru, Egyptian President Gamal Abdel Nasser, Ghanaian President Kwame Nkrumah and Indonesian President Sukarno. Kwame Nkrumah was the first Prime Minister and President of Ghana, having led the Gold Coast to independence from Britain in 1957. An influential advocate of Pan-Africanism, Nkrumah was a founding member of the Organization of African Unity and winner of the Lenin Peace Prize from the Soviet Union in 1962.

128. (a) The Bombay plan was a set of proposal of a small group of industrialist in 1844. The idea of planning in independents India was drawn from it.

129. (d) The correct answer is cyclones. Cyclones around the world are named by Regional Specified Meteorological Centers and Tropical Cyclone Warning Centers.

130. (c) Manipur's Imphal will be the fourth capital city in the mountainous northeastern region expected to come on the Indian railway map. A passenger train Rajdhani Express from Assam's Silchar railway station has reached the Vaingaichunpao railway station in Manipur for a trial run, putting the state on the Indian Railways map. The train covered the distance of 11 km between the two northeastern stations, with railway officials onboard.

131. (b) January 2021 saw prolonged Forest Fire in Uttarakhand, Himachal Pradesh (Kullu Valley) and Nagaland-Manipur border (Dzukou Valley).

132. (a) Currently, India comprises 28 States and 8 Union Territories.

133. (a) Rain, Snow sleet or hails are the different forms of precipitation. Precipitation is any type of water that forms in the Earth's atmosphere and then drops onto the surface of the Earth. The rain that falls from clouds but freezes before it reaches the ground is called sleet or ice pellets. Snow is precipitation that falls in the form of ice crystals. Hail forms when very cold water droplets freeze, or turn solid, as soon as they touch things like dust or dirt . Water vapor in the atmosphere is visible as clouds and fog.

134. (a) The two main types of weathering which occur in deserts are Mechanical weathering, which is the disintegration of a rock by mechanical forces that do not change the rock's chemical composition and Chemical weathering, which is the decomposition of a rock by the alteration of its chemical composition.The arid or hot desert areas dominated by mechanical weathering. Due to the high diurnal range of temperature in the arid areas, repeated expansion and contraction of the outer layer of the rock takes place.

135. (c) New York City and Tokyo were the first known megacities, both reaching an urban conglomeration of over 10 million by the 1950s.

136. (b) Peninsular Plateau consists of stable table land with highly dissected plateaus, denuded rocks and developed series of scarps.

137. (d) These occur in the areas which receive rainfall less than 50 cm and desert areas. It includes semi-arid areas of south west Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Uttar Pradesh. These consist of a variety of grasses and shrubs. In these forests, plants remain leafless for most part of the year and give an expression of scrub vegetation.Important species found are babool, ber and wild date palm, khair, neem, khejri, palas, etc. Tussocky grass upto a height of 2m as the under growth.

138. (c) The three processes that change one rock to another are crystallization, metamorphism, and erosion and sedimentation. Any rock can transform into any other rock by passing through one or more of these processes. This creates the rock cycle. The rock cycle is a process in which rocks are continuously transformed between the three rock types igneous, sedimentary and metamorphic.

139. (a) In geology, denudation is the long-term sum of processes that cause the wearing away of the Earth's

surface by moving water, ice, wind and waves, leading to a reduction in elevation and relief of landforms and landscapes. Denudation is the wearing away of landmass by various processes like weathering, mass movement, erosion and transportation. It results in lowering the level of land, rounding exposed rock surfaces and levelling the peaks. Various agents of erosion like water, wind, and glaciers are involved in the process of denudation.

140. (d) Moraines, eskers and outwash plains can be observed in the union territory of Ladakh. Outwash plains and eskers form due to the flow of meltwater in front of (outwash plains) or beneath (eskers) that glacier ice. They are composed of glacial sediments that have been reworked by flowing water. The moraine lies about 3 km north of Leh at 3650 m altitude.The irrigated and relatively fertile outwash fan stands in sharp contrast to the adjacent alluvial fans and mountains ides that are devoid of most vegetation.

141. (c) Pandit Birju Maharaj was an Indian dancer, composer, singer and exponent of the "Lucknow Kalka-Bindadin" Gharana of Kathak dance in India.

142. (b) India got its first ever export order for BrahMos missiles on when the Philippines' Defence Ministry signed USD 374 million contract with the BrahMos Aerospace Pvt Ltd (BAPL) to supply undisclosed number of missiles. The BAPL, an India-Russian joint venture, produces the supersonic cruise missile BrahMos that can be launched from submarines, ships, aircraft, or from land platforms. The USD 374 million contract is to supply shore-based anti-ship BrahMos missiles to the Philippines' Navy.

143. (a) The Supreme Court had appointed its former judge Indu Malhotra as chairperson of a panel to investigate Prime Minister Narendra Modi's security lapse in Punjab in January. The committee was made to look into the causes of the security breach that left PM Modi's convoy stuck on a flyover for 15-20 minutes while it was on its way to the National Martyrs Memorial in Hussainiwala, a few kilometres away from the Pakistan border.

144. (d) New Zealand legend Ross Taylor finished his Test career by bagging the wicket of Ebadot Hossain of Bangladesh at Hagley Oval in Christchurch.

145. (d) Senior rocket scientist S Somanath has been appointed as the tenth chairman of the Indian Space Research Organisation (ISRO) and secretary, department of space (DoS).

146. (b) Forest Survey report 2021 was released in the month of January 2022. The reports say that there has been an increase of 2,261 sq km in the total forest and tree cover of the country in last two years. Area-wise Madhya Pradesh has the largest forest cover in the country. Maximum increase in forest cover witnessed in Andhra Pradesh (647 sq km) followed by Telangana (632 sq km) and Odisha (537 sq km).17 states/UT's have above 33 percent of the geographical area under forest cover. Total carbon stock in country's forest is estimated to be 7,204 million tonnes, an increase of 79.4 million. Total mangrove cover in the country is 4,992 sq km, an increase of 17 sq Km observed.

147. (b) The Union Finance Minister Nirmala Sitaraman is the current chairman of the GST Council. The Governing body of the GST is the GST Council. The GST Council has 31 members representing the States and Union Territories.

148. (b) Red Sanders (Red Sandalwood) has fallen back into the '**endangered**' category in the International Union for Conservation of Nature's (IUCN) Red List.

149. (c) "Government of India has decided to commemorate December 26 as 'Veer Baal Diwas' in the honour of supreme sacrifice made by Sahibzada Zorawar Singh and Sahibzada Fateh Singh.

150. (b) Ministry of AYUSH Govt. of India organized a large scale virtual Surya Namaskar programme to mark the occasion of Makar Sankranti on 14th January, 2022 under Azadi ka Amrit Mahotsav celebrations.