2020 NATA Past Year Question Paper Part-B

Test Date : 29-Aug-2020
Test Name : PART-B

Q.1 What is the molecular mass of a glucose molecule?

Options :

a. 192.422

b. 80.619

c. 240.896

d. 180.162

- Correct Answer: d

Q.2 What is the correct order of the metallic character of the following elements?

Options :

a. B > Al > Mg > K

b. Al > Mg > B > K

c. Mg > Al > K >B

d. K > Mg > Al > B

- Correct Answer: d

Q.3 Dipole - Dipole interaction energy between rotating polar molecules is inversely proportional to the distance between polar molecules as

Options :

a. r

b. r^3

c. r^6

d. r^2

- Correct Answer: c

Q.4 Which one of the following is not a type of hydride?

Options :

a. saline

b. molecular

c. metallic

d. electrolytic

- **Correct Answer:** d

Q.5 Sodium hydroxide is manufactured by the

Options :

a. Castner - Keller process

b. Solvay process

c. Mannheim process

d. Hargreaves process

- **Correct Answer:** a

Q.6 If 3rd, 6th & 11th terms of an Arithmetic Progression are in Geometric Progression, then the common ratio of the Geometric Progression is

Options :

a. $\frac{4}{3}$

b. $\frac{5}{3}$

c. $\frac{8}{3}$

d. $\frac{11}{3}$

- Correct Answer: b

Q.7 The value of $3\left[\sin^4\left(\frac{3\pi}{2}-a\right)+\sin^4(3\pi+a)\right]-2\left[\sin^6\left(\frac{\pi}{2}+a\right)+\sin^6(5\pi-a)\right]$ is

Options :

a. 0

b. 1

c. 3

d. $\sin 4a+\cos a$

- Correct Answer: b

Q.8 If non-zero numbers a,b,c are in Harmonic Progression, then the straight line $\frac{x}{a}+\frac{y}{b}+\frac{1}{c}=0$ always passes through the fixed point

Options :

a. $(-1,-2)$

b. $(-1,2)$

c. $\left(1,-\frac{1}{2}\right)$

d. $(1,-2)$

- **Correct Answer:** d

Q.9 The value of $\int_0^1 \sqrt{\frac{1-x}{1+x}}\,dx$ is

Options :

a. $\frac{\pi}{2}+1$

b. 1

c. $\frac{\pi}{2}-1$

d. -1

- **Correct Answer:** c

Q.10 The number of arrangements of the letters in the word 'POTATO', in which two 'T's do not appear adjacently, is

Options :

a. 40

b. 60

c. 80

d. 120

- **Correct Answer:** b

Q.11 If a charged spherical conductor of radius 10 cm has potential V at a point distant 5cm from the center, then the potential at the point at the distant 15 cm from the center will be

Options :

a. 1/3 V

b. 3/2 V

c. 3 V

d. 2/3 V

- **Correct Answer:** d

Q.12 The magnetic susceptibility is negative for

Options :

a. Diamagnetic material

b. Paramagnetic material

c. Ferromagnetic material

d. Para & Ferromagnetic materials

- **Correct Answer:** a

Q.13 A circular loop of radius R carrying current I lies in X -Y plane with its center at origin, the total magnetic flux through X- Y Plane is

Options :

a. Directly proportional to current I

b. Directly proportional to radius R

c. Directly proportional to R^2

d. Zero

- **Correct Answer:** d

Q.14 If we need peak load voltage of 40V out of a bridge rectifier, what is the approximate rms value of secondary voltage

Options :

a. 28.3 V

b. 0 V

c. 4.4 V

d. 56.6 V

- **Correct Answer:** a

Q.15 A potential barrier of 0.6 V exists across a PN junction, if the depletion region is 1μm wide, what is the intensity of electric field in the region?

Options :

a. $4\times 10^5 Vm^{-1}$

b. $5\times 10^5 Vm^{-1}$

c. $6\times 10^5 Vm^{-1}$

d. $2\times 10^5 Vm^{-1}$

- **Correct Answer:** c

Q.16 Tiling used to cover the lower most portion of the wall is termed as a _____.

Options :

a. Dado

b. Handrail

c. Skirting

d. Nosing

- **Correct Answer:** c

Q.17 Which of the following material has the highest fire resistance?

Options :

a. Wood

b. Stone

c. Fabric

d. Jute

- **Correct Answer:** b

Q.18 Space left around or in front of a building is typically termed as:

Options :

a. Setback

b. Fore set

c. Inset

d. Offset

- **Correct Answer:** a

Q.19 Typical reinforcements used in making RCC structures are:

Options :

a. Wooden sticks

b. Steel rods

c. Brick

d. Aluminium bars

- **Correct Answer:** b

Q.20 Which of the following is not suitable for building construction?

Options :

a. Stainless steel

b. Beach sand

c. crushed stone

d. Wooden planks

- **Correct Answer:** b

Q.21 Architect _____ is a pioneer of Modern architecture.

Options :

a. Zaha Hadid

b. Rem Koolhaas

c. Antonio Gaudi

d. Walter Gropius

- **Correct Answer:** d

Q.22 Five Points of Architecture is an architecture manifesto by

Options :

a. Zaha Hadid

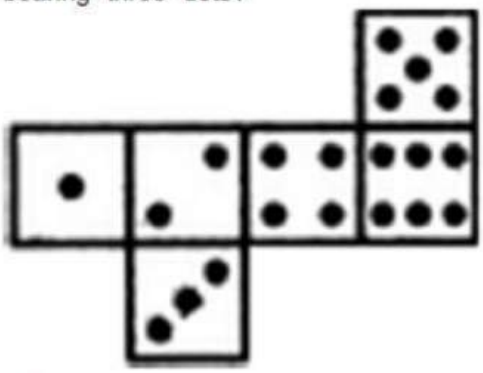
b. Mies Van Der Rohe

c. Le Corbusier

d. Walter Gropius

- **Correct Answer:** c

Q.23 When the following figure is folded to form a cube, how many dots lie opposite the face bearing "three" dots?



Options :

a. 2

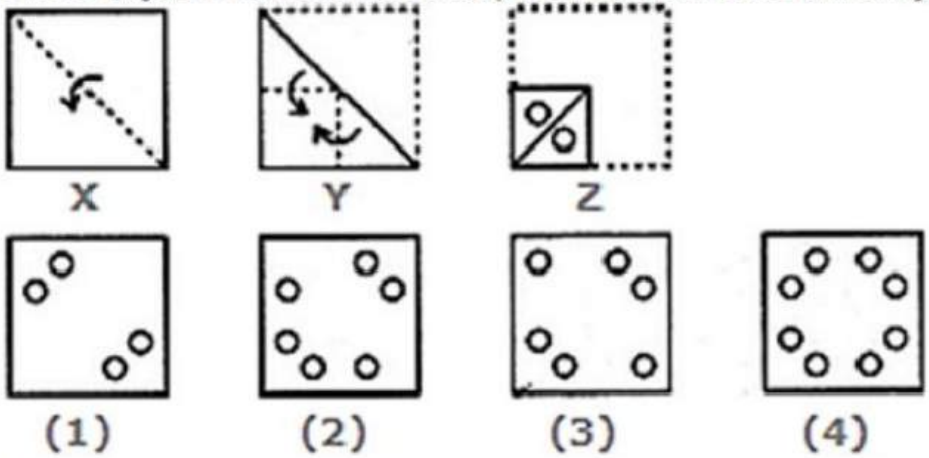
b. 4

c. 5

d. 6

- **Correct Answer:** c

Q.24 Choose a figure which would most closely resemble the unfolded form of Figure (Z).



Options :

a. figure (1)

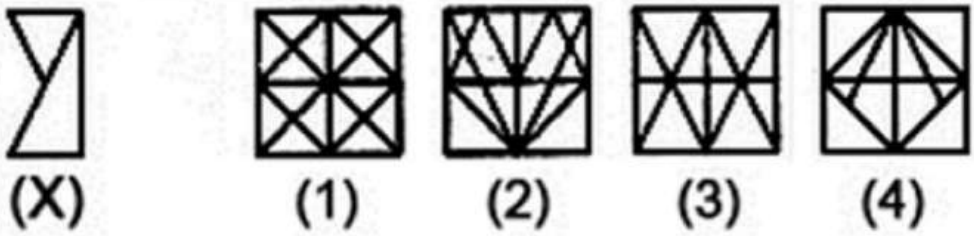
b. figure (2)

c. figure (3)

d. figure (4)

- Correct Answer: d

Q.25 Find out the alternative figure which contains figure (X) as its part.



Options :

a. figure (1)

b. figure (2)

c. figure (3)

d. figure (4)

- Correct Answer: c

Q.26 Select the alternative which represents three out of the five alternative figures which when fitted into each other would form a complete square.

(1) (2) (3) (4) (5)

Options :

a. (1) (3) (4)

b. (1) (2) (4)

c. (2) (3) (4)

d. (3) (4) (5)

- Correct Answer: a

Q.27 Choose the alternative which is closely resembles the Mirror-image of the given combination.

D6Z7F4

Options :

a. figure (1)

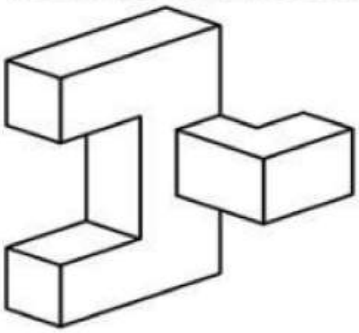
b. figure (2)

c. figure (3)

d. figure (4)

- Correct Answer: c

Q.28 The number of surfaces for the given object is:



Options :

a. 16

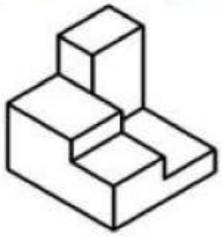
b. 10

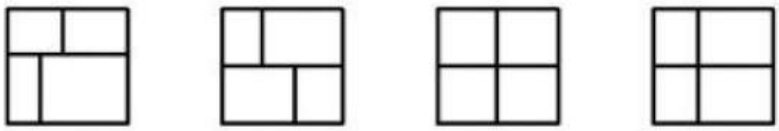
c. 12

d. 18

- **Correct Answer:** a

Q.29 Identify the correct top view for the given 3D object





Options :

a. figure (1)

b. figure (2)

c. figure (3)

d. figure (4)

- **Correct Answer:** b

SET-2 (PART B)

Q.1 A 100 watt bulb emits monochromatic light of wavelength 400nm.The number of photons emitted by the bulb is

Options :

a. $1.012 \times 10^{20}\ s^{-1}$

b. $5.012 \times 10^{20}\ s^{-1}$

c. $9.012 \times 10^{20}\ s^{-1}$

d. $2.012 \times 10^{20}\ s^{-1}$

- **Correct Answer :** d

Q.2 Which of the following is not associated with chemical bonds

Options :

a. Bond length

b. Bond gap

c. Bond order

d. Bond polarity

- **Correct Answer :** b

Q.3 Pressure of 1g of an ideal gas A at $27^{o}C$ is found to be 2 bar. When 2g of another ideal gas B is introduced in the same flask at the same temperature the pressure becomes 3 bar. What is the relationship between the molecular masses of A and B

Options :

a. $M_A = M_B$

b. $M_A = 2M_B$

c. $M_B = 3M_A$

d. $M_B = 4\ M_A$

- **Correct Answer :** d

Q.4 What is the strength of 10 volume solution of hydrogen peroxide

Options :

a. 2% H_2O_2 solution.

b. 3% H_2O_2 solution.

c. 4% H_2O_2 solution.

d. 5% H_2O_2 solution.

- **Correct Answer :** b

Q.5 In the preparation of hydrogen from methane using steam at 1273 k the catalyst used is

Options :

a. Iron

b. Platinum

c. Nickel

d. Vanadium Pent oxide

- Correct Answer : c

Q.6 If the geometric mean of two numbers a & b, $a > b > 0$, is one fifth of their arithmetic mean, then the value of $\frac{a-b}{a+b}$ is

Options :

a. $\frac{2\sqrt{5}}{7}$

b. $\frac{2\sqrt{6}}{5}$

c. $\frac{3\sqrt{6}}{8}$

d. $\frac{3\sqrt{5}}{8}$

- Correct Answer : b

Q.7 The number of real values of (for which the system of linear equations

$$2x+4y-\lambda z=0$$
$$4x+\lambda y+2z=0$$
$$\lambda x+2y+2z=0$$

has infinitely many solutions, is

Options :

a. 0

b. 1

c. 2

d. 3

- **Correct Answer :** b

Q.8 The value of $\frac{\tan\theta+\sec\theta-1}{\tan\theta-\sec\theta+1}$ is

Options :

a. $\frac{1-\sin\theta}{\cos\theta}$

b. $\frac{1+\sin\theta}{2\cos\theta}$

c. $\frac{\cos\theta}{1+\sin\theta}$

d. $\frac{1+\sin\theta}{\cos\theta}$

- **Correct Answer :** d

Q.9 On the interval $[0,1]$, the function $x^{25}(1-x)^{75}$ takes its maximum value at

Options :

a. $x = 0$

b. $x = 1/4$

c. $x = 1/2$

d. $x = 1/3$

- Correct Answer : b

Q.10 In how many ways, 8 questions can be selected in a question paper containing 12 questions so that it always contains question numbers 1, 5 and 10?

Options :

a. 126

b. 252

c. 495

d. 512

- Correct Answer : a

Q.11 5A of current flowing through a resistor for 2 minutes produces 3000 Joules of heat , the value of resistance is

Options :

a. 1 ohm

b. 5 ohms

c. 4 ohms

d. 2 ohms

- Correct Answer : a

Q.12 An alternating current has

Options :

a. Only positive value

b. Only negative value

c. Both positive and negative value

d. Steady state

- **Correct Answer :** c

Q.13 The particle of mass 3×10^{-6} g has the same wavelength as an electron moving with a velocity of 6×10^{6} m/s, The velocity of particle is

Options :

a. 1.82×10^{-18} m/s

b. 9×10^{-2} m/s

c. 3×10^{-30} m/s

d. 1.82×10^{-15} m/s

- **Correct Answer :** d

Q.14 In a hydrogen atom, the electron revolving in the fourth orbital has the angular momentum equal to

Options :

a. h

b. $2h/\pi$

c. $\frac{4h}{\pi}$

d. h/π

- **Correct Answer :** b

Q.15 Which one of the following is the universal gate?

Options :

a. NAND gate

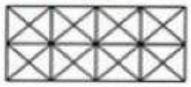
b. OR gate

c. AND gate

d. NOT gate

- **Correct Answer :** a

Q.16 How many total numbers of squares are there in the figure given below?



Options :

a. 11

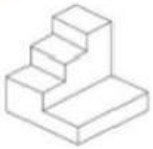
b. 21

c. 24

d. 26

- **Correct Answer :** c

Q.17 The 3- D figure shows the view of an object. Identify the correct top view from amongst the answer figures.



Options :

a. 

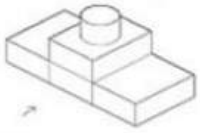
b. 

c. 

d. 

- **Correct Answer :** b

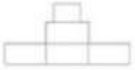
Q.18 The 3- D figure shows the view of an object. Identify the correct front view from amongst the answer figures, looking in the direction of the arrow.

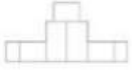


Options :

a. 

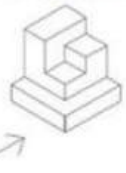
b. 

c. 

d. 

- **Correct Answer :** c

Q.19 The 3- D figure shows the view of an object. Identify the correct front view from amongst the answer figures. looking in the direction of the arrow.



Options :

a. 

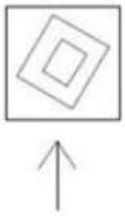
b. 

c. 

d. 

- **Correct Answer :** d

Q.20 The problem figure shows the top view of an object.
Identify the correct elevation from amongst the answer figures, looking in the direction of the arrow.



Options :

a. 

b. 

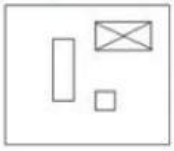
c. 

d. 

- **Correct Answer :** b

Q.21 The top view of objects is shown in the figure.

Identify the correct elevation from amongst the answer figures, looking in the direction of the arrow.



Options :

a. 

b. 

c. 

d. 

- **Correct Answer :** c

Q.22 When is World Architecture Day celebrated ?

Options :

a. 21st June

b. First Monday every October

c. Second Saturday every March

d. 5th June

- **Correct Answer :** b

Q.23 Where is Char Minar located?

Options :

a. Hyderabad

b. Allahabad

c. Cochin

d. Chennai

- **Correct Answer :** a

Q.24 In which metropolitan city is the Jehangir Art Gallery located?

Options :

a. Hyderabad

b. Agra

c. Delhi

d. Mumbai

- **Correct Answer :** d

Q.25 What was the theme of the World Environment Day 2020?

Options :

a. Connect people to Nature

b. Beat Air Pollution

c. Celebrate Biodiversity

d. Beat Plastic Pollution

- **Correct Answer :** c

Q.26 If n (u) =700, n (A) = 200, n (B) = 300 and n (A ∩ B) = 100, then n (A′ ∩ B′) is?

Options :

a. 300

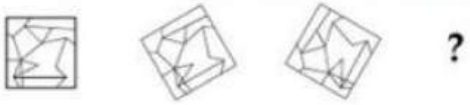
b. 200

c. 400

d. 600

- Correct Answer : a

Q.27 Which one of the answer figures will complete the sequence of the three problem figures?



Options :

a. A. 

b. B. 

c. C. 

d. D. 

- Correct Answer : d

Q.28 In a certain code language COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language?

Options :

a. MFEDJJOE

b. EOJDEJFM

c. EOJDJEFM

d. MFEJDJOE

- Correct Answer : c

SET – 3

Q.1 Which of the following will have the least negative gain enthalpy

Options :

a. P

b. S

c. Cl

d. F

- Correct Answer : a

Q.2 For the oxidation of iron $4Fe(s) + 3O_2(g) \rightarrow 2Fe_2O_3(s)$ entropy change is - 549.4$JK^{-1}mol^{-1}$ at 298 K. Heat of reaction is ΔH_r is -1648 x10^3 $Jmol^{-1}$. The total entropy is

Options :

a. 5530$JK^{-1}mol^{-1}$

b. 4980.6 $JK^{-1}mol^{-1}$

c. 4569.5 $JK^{-1}mol^{-1}$

d. 4287.2 $JK^{-1}mol^{-1}$

- Correct Answer : b

Q.3 What is the molar solubility of $Ni(OH)_2$ in a 0.10 M NAOH. The ionic product of $Ni(OH)_2$ is 2.0×10^{-15}

Options :

a. 2.0×10^{-15} M

b. 2.0×10^{-14} M

c. 2.0×10^{-13} M

d. 2.0×10^{-12} M

- **Correct Answer :** c

Q.4 Which one of the following is an allotrope of carbon?

Options :

a. Carbon dioxide

b. Activated Carbon

c. Fullerene

d. Charcoal

- **Correct Answer :** c

Q.5 Sodium Chlorate is a type of

Options :

a. Herbicide

b. Fungicide

c. Insecticide

d. weedicide

- **Correct Answer :** a

Q.6 If $a_1, a_2, \ldots, a_n, \ldots$ are in geometric progression, then the value of the determinant $\begin{vmatrix} \log a_n & \log a_{n+1} & \log a_{n+2} \\ \log a_{n+3} & \log a_{n+4} & \log a_{n+5} \\ \log a_{n+6} & \log a_{n+7} & \log a_{n+8} \end{vmatrix}$ is

Options :

a. 0

b. 1

c. 2

d. 4

- Correct Answer : a

Q.7 The incentre of the triangle with vertices $(1, \sqrt{3})$, $(0,0)$ & $(2,0)$ is

Options :

a. $\left(1, \sqrt{\frac{3}{2}}\right)$

b. $\left(\frac{2}{3}, \frac{1}{\sqrt{3}}\right)$

c. $\left(\frac{2}{3}, \sqrt{\frac{3}{2}}\right)$

d. $\left(1, \frac{1}{\sqrt{3}}\right)$

- Correct Answer : d

Q.8 The edges of a parallelepiped are of unit length and are parallel to non-coplanar unit vectors $\hat{a},\hat{b},\hat{c}$ such that $\hat{a}\cdot\hat{b}=\hat{b}\cdot\hat{c}=\hat{c}\cdot\hat{a}=1/2$. Then the volume of the parallelepiped is

Options :

a. $\frac{1}{\sqrt{3}}$

b. $\frac{2}{\sqrt{3}}$

c. $\frac{1}{\sqrt{2}}$

d. $\frac{1}{2\sqrt{2}}$

- Correct Answer : c

Q.9 Which of the following functions is differentiable at x=0?

Options :

a. $\cos(|x|)+|x|$

b. $\cos(|x|)-|x|$

c. $\sin(|x|)+|x|$

d. $\sin(|x|)-|x|$

- Correct Answer : d

Q.10 What is the probability that a leap year selected randomly will have 53 Mondays?

Options :

a. $\frac{1}{7}$

b. $\frac{2}{7}$

c. $\frac{3}{7}$

d. $\frac{4}{7}$

- Correct Answer : b

Q.11 Two Electric bulbs whose resistances are in the ratio of 1:2 are connected in parallel to a constant voltage source the power dissipated in them will have the ratio

Options :

a. 1:2

b. 1:1

c. 2:1

d. 1:4

- **Correct Answer :** c

Q.12 A resistor and a capacitor are connected in series with an ac source. If the potential drop across the capacitor is 5V and that across resistor is 12V, the applied voltage is

Options :

a. 13 V

b. 17 V

c. 5 V

d. 12 V

- **Correct Answer :** a

Q.13 When the number of turns in a coil is made four times without any change in the length of the coil, its self inductance becomes

Options :

a. Unchanged

b. Two times

c. Four times

d. Sixteen times

- **Correct Answer :** d

Q.14 If the kinetic energy of the free electron is made double, change in de- Broglie wavelength will be

Options :

a. $\sqrt{2}$

b. $1/\sqrt{2}$

c. 2

d. $1/2$

- **Correct Answer :** b

Q.15 When source voltage increase in a Zener diode, which of these currents remain approximately constant?

Options :

a. Series current

b. Zener current

c. Total current

d. Load current

- **Correct Answer :** d

Q.16 In which country is the oval amphitheatre called the Coliseum located?

Options :

a. Sicily

b. Greece

c. Italy

d. France

- **Correct Answer :** c

Q.17 What does Plinth in a building refer to?

Options :

a. Roof of a building

b. Raised platform

c. Wall openings

d. Shallow wall

- **Correct Answer :** b

Q.18 What does the term "Monastery" refer to?

Options :

a. Industrial shed

b. Entertainment building

c. Domestic quarters

d. Commercial streets

- **Correct Answer :** c

Q.19 Which of these is not a work of Leonardo da Vinci.

Options :

a. Mona Lisa

b. The Last Supper

c. The Starry Night

d. Vitruvian Man

- **Correct Answer :** c

Q.20 1 feet equals to

Options :

a. 1 inch

b. 10 inch

c. 6 inch

d. 12 inch

- **Correct Answer :** d

Q.21 Which of the following suits the term sustainable construction?

Options :

a. Reducing the usage of local materials

b. Excessive Deforestation

c. Increasing carbon foot print

d. Reducing the impact on environment

- **Correct Answer :** d

Q.22 CFC (Chlorofluorocarbons) can be related to

Options :

a. Water purifying agent

b. Ozone depletion

c. Deforestation

d Renewable energy source

- **Correct Answer :** b

Q.23 ..... is a large unfinished Roman Catholic Basilica designed by Antoni Gaudi.

Options :

a. Frauenkirche, Dresden

b. Sagrada Familia, Barcelona

c. Santhome Basilica, Chennai

d. Ronchamp Chapel, Ronchamp

- Correct Answer : b

Q.24 Who designed the India Habitat Center at New Delhi ?

Options :

a. Edwin Lutyens

b. Charles Correa

c. Joseph Allen Stein

d. Balkrishna Vithaldas Doshi

- Correct Answer : c

Q.25 Retaining walls are primarily used to

Options :

a. Retain soil

b. Store timber

c. Retain wind

d. Prevent heat

- Correct Answer : a

Q.26 The term "Ekistics" refers to study of

Options :

a. Human Settlements

b. Ecology

c. Sound and light

d. Energy studies

- **Correct Answer :** a

Q.27 What is the standard height of a typical staircase handrail ?

Options :

a. 200 mm -300 mm

b. 450 mm - 550 mm

c. 750 mm - 900 mm

d. 1800 mm - 2100 mm

- **Correct Answer :** c

Q.28 Which of the following is Odd function?

Options :

a. $\cos x + |x|$

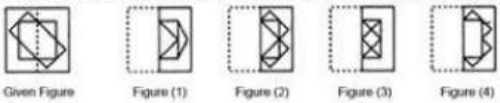
b. $\cos x^2$

c. $\sin |x|$

d. x^3

- **Correct Answer :** d

Q.29 Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line as in the given figure.



Options :

a. Figure (1)

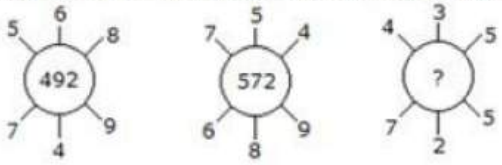
b. Figure (2)

c. Figure (3)

d. Figure (4)

- **Correct Answer :** b

Q.30 Which number will replace the question mark?



Options :

a. 135

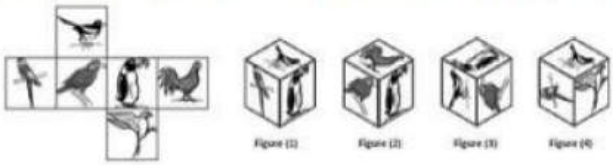
b. 130

c. 115

d. 140

- **Correct Answer :** b

Q.31 Which picture cube does the unfolded surface make?



Options :

a. Figure (1)

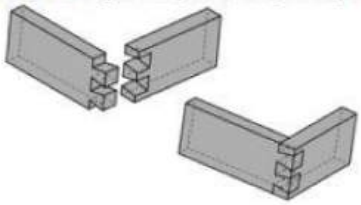
b. Figure (2)

c. Figure (3)

d. Figure (4

- **Correct Answer :** c

Q.32 The given figure represents joinery in carpentry and Timber construction works. What is it called?



Options :

a. Dowelled Joint

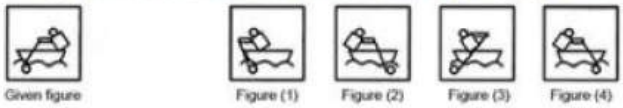
b. Dovetail Joint

c. Rabbeted Joint

d. Mortise & wedge joint

- **Correct Answer :** b

Q.33 Identify the correct mirror image of the given figure.



Options :

a. Figure (1)

b. Figure (2)

c. Figure (3)

d. Figure (4)

SET – 4

Q.1 What is the mass of the photon with wave length 3.6 A

Options :

a. 6.125×10^{-29} kg

b. 6.125×10^{-27} kg

c. 6.125×10^{-21} kg

d. 6.125×10^{-19} kg

- **Correct Answer :** a

Q.2 In the modern periodic table, the period indicates the value of

Options :

a. atomic number

b. atomic mass

c. principal quantum number

d. Azimuthal quantum number

- **Correct Answer :** c

Q.3 One mole of H_2O + one mole of CO are taken in a10 L vessel and heated to 725 K. At equilibrium 40% of water (by mass) reacts with CO according to the equation H_2O (g) + CO (g) ⇌ H_2 (g) + CO_2 (g) The equilibrium constant is equal to

Options :

a. 0.88

b. 0.66

c. 0.44

d. 0.22

- **Correct Answer :** c

Q.4 Hydrogen peroxide is sold in the market as an antiseptic as

Options :

a. perhydrol

b. hydrates

c. hydroquinone

d. tartaric acid

- **Correct Answer :** a

Q.5 The reaction used in the preparation of higher alkenes containing even number of carbon atoms is

Options :

a. Wurtz Reaction

b. Shift Reaction

c. Dumas Reaction

d. Fisher - Tropsch Reaction

- **Correct Answer :** a

Q.6 The value of $\sum_{r=16}^{30}(r-2)(r+3)$ is

Options :

a. 8470

b. 8070

c. 7180

d. 8710

- **Correct Answer :** a

Q.7 If A is a 3x3 non-singular matrix such that $AA^T=A^TA$ & $B=A^{-1}A^T$, then BB^T equals

Options :

a. I

b. B^{-1}

c. $(B^{-1})^T$

d. $I+B$

- **Correct Answer :** a

Q.8 From a point P $(\lambda,\lambda,\lambda)$, perpendiculars PQ & PR are drawn respectively on the lines $y=x, z=1$ & $y=-x, z=-1$. If P is such that $\angle QPR$ is a right angle, then the possible value of λ is

Options :

a. $\sqrt{2}$

b. 1

c. -1

d. $-\sqrt{2}$

- **Correct Answer :** c

Q.9 The parabola $y^2 = 4ax$ is cut orthogonally by

Options :

a. $x^2 + y^2 = a^2$

b. $y = e^{-\frac{x}{2a}}$

c. $y = ax$

d. $x^2 = 4ay$

- Correct Answer : d

Q.10 If the mean of the numbers a, b, 8, 5, 10 is 6 and variance is 6.8, then the possible values of a & b are

Options :

a. $a = 3, b = 4$

b. $a = 0, b = 7$

c. $a = 5, b = 2$

d. $a = 1, b = 6$

- Correct Answer : a

Q.11 When a point charge of 6mC is moved between two points in an electric field, the work done is 1.8 x 10^{-5} J. The potential difference between the two points is

Options :

a. 1.08 V

b. 1.08 mV

c. 3V

d. 30 V

- Correct Answer : c

Q.12 A wire of length 1 meter carrying current of 2 Amp is placed inside a field of magnetic induction 20 T such that it makes an angle of 30 ^{o} with the direction of the field. The force experienced by the wire is

Options :

a. 40 N

b. 20 N

c. $10\sqrt{3}$ N

d. $40\sqrt{3}$ N

- Correct Answer : b

Q.13 If a secondary coil has 40 turns and primary coil has 20 turns is charged with 50V of potential difference, then potential difference of secondary coil would be

Options :

a. 25 V

b. 50 V

c. 60 V

d. 100 V

- Correct Answer : d

Q.14 The speed of light in an isotropic medium is depends on

Options :

a. It's intensity

b. It's wavelength

c. The nature of propagation

d. The motion of the source with respect to medium

- Correct Answer : b

Q.15 In a good conductor the forbidden energy gap between the conduction band and valence band is

Options :

a. infinity

b. zero

c. narrow

d. wide

- Correct Answer : b

Q.16 Which ancient text consists of hymns on Indian architecture?

Options :

a. Rig Veda

b. Yajur Veda

c. Sama Veda

d. Adharva Veda

- Correct Answer : a

Q.17 Identify the building which is not designed by an Indian architect.

Options :

a. Amdavad ni Gufa, Ahmedabad

b. Hall of Nations, New Delhi

c. Indian Parliament House, New Delhi

d. Sabarmati Ashram, Ahmedabad

- Correct Answer : c

Q.18 Which one of the seven wonders of the ancient world still exists?

Options :

a. Hanging gardens of Babylon

b. The Great Pyramid of Giza

c. Taj Mahal

d. Colossus of Rhodes

- **Correct Answer :** b

Q.19 It is a war memorial constructed for the soldiers of the British Indian army who lost their lives in the first world war.

Options :

a. India Gate, New Delhi

b. Charminar, Hyderabad

c. Gateway of India, Mumbai

d. Raj Ghat, Delhi

- **Correct Answer :** a

Q.20 In which style of Architecture is the Brihadeshwara temple is designed and constructed?

Options :

a. Dravidian

b. Mughal

c. Indo Saracenic

d. Kalinga

- **Correct Answer :** a

Q.21 Which is an award related to architecture?

Options :

a. Academy Awards

b. Utham Jeevan Raksha Padak

c. Abel Prize

d. Pritzker Prize

- **Correct Answer :** d

Q.22 What is the origin of the lion pillar at Sarnath?

Options :

a. Jain

b. Sikh

c. Buddhist

d. Nayak

- **Correct Answer :** c

Q.23 Which is the tallest building in the world as on date?

Options :

a. One World Trade Centre

b. Burj Khalifa

c. Shanghai Tower

d. Petronas Towers

- **Correct Answer :** b

Q.24 Which is the world's largest stone sun dial located?

Options :

a. Royal Observatory Greenwich, London

b. Jantar Mantar, Jaipur

c. Paris Observatory, Paris

d. Sun Temple, Konark

- **Correct Answer :** b

Q.25 Which among the following are structures carved out of monolithic stones.

Options :

a. Jagannath Temple, Puri

b. Papanatha Temple, Patadakal

c. Durga Temple Aihole

d. Pancha Rathas, Mahabalipuram

- **Correct Answer :** d

Q.26 Complete the series

Options :

a. A) 

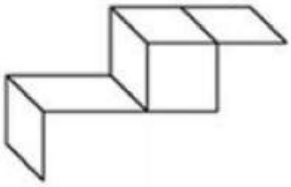
b. B) 

c. C) 

d. D) 

- **Correct Answer :** a

Q.27 Which of the following is hidden in the 3d composition?



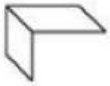
Options :

a. A)

b. B)

c. C)

d. D)



- Correct Answer : c

Q.28 In the following sequence find the odd one out.

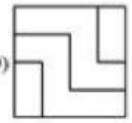
Options :

a. A)

b. B)

c. C)

d. D)



- Correct Answer : d

Q.29 Which of the following graphic depicts weight?

Options :

a. A) BIG / SMALL

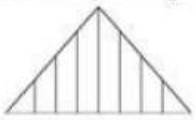
b. B) BIG / SMALL

c. C) BIG / SMALL

d. D) BIG / SMALL

- Correct Answer : c

Q.30 How many triangles are hidden in the given figure?



Options :

a. 8

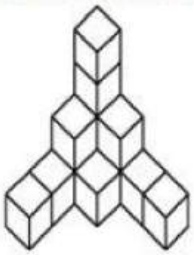
b. 9

c. 10

d. 11

- Correct Answer : b

Q.31 A total of how many cubes can be located in the following composition.



Options :

a. 13

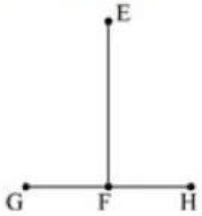
b. 12

c. 11

d. 10

- **Correct Answer :** a

Q.32 What is the relationship between the GH and EF



Options :

a. GH > EF

b. GH = EF

c. GH < EF

d. GH ≠ EF