SECTION-I
PHYSICAL SCIENCES
(PHYSICS)

Q.1. Physical quantity P is given by $p = \frac{a^2 b^3}{C\sqrt{d}}$. If percentage error in the measurement of a, b, c & d are 4%, 2%, 3%& 1% respectively, then the percentage error in P is

(A) 9% (B) 11% (C) 13.5% (D) 17.5%

Q.2. The radius of the earth is 6400 km. The order of magnitude is

(A) $10^7 m$ (B) $10^4 m$ (C) $10^3 m$ (D) $10^2 m$

Q.3. The number 3498 rounded to two significant figure is

(A) 34.98×10^2 (B) 34.98 (C) 35.00 (D) 3500

Q.4. Two vectors having equal magnitudes of r units acting at an angle of $45°$ have resultant $\sqrt{2+\sqrt{2}}$ units the value of r is

(A) 0 (B) 1 (C) $\sqrt{2}$ (D) $2\sqrt{2}$

Q.5. The horizontal range of a projectile is 800m. The maximum height attained by it will be

(A) 200m (B) 400m (C) 600m (D) 800m

Q.6. A car accelerates from rest at a constant rate $\propto$ for same time after which it decclerates at a constant rate β and comes to rest. If the total elapsed time is t, the maximum velocity acquired by the car will be

(A) $\frac{\alpha^2-\beta^2}{\alpha\beta}\ t$ (B) $\frac{\alpha^2+\beta^2}{\alpha\beta}t$ (C) $\frac{\alpha+\beta}{\propto\beta}t$ (D) $\frac{\alpha\beta}{\propto+\beta}t$

Q.7. A cricket ball of mass 200g is moving with speed 18 km/hr and it is reflected back with same speed. The impulse applied on ball is

(A) 0.2 kg m/s (B) 2 kg m/s (C) 5 kg m/s (D) 10 kg m/s

Q.8. A body of mass m accelerates uniformly form rest to v_1 in timet_1. As a function of t, the instantaneous power delivered to the body is

(A) $\frac{m v_1\, t}{t_1}$ (B) $\frac{m v_1^2 t}{t_1}$ (C) $\frac{m v_1^2 t^2}{t_1}$ (D) $\frac{m v_1^2 t}{t_1^2}$

Q.9. A rain drop of radius r falls in air with a terminal speed vt. What is the terminal speed of rain drop of radius 2r?

(A) $\frac{v_t}{2}$ (B) v_t (C) $2v_t$ (D) $4v_t$

Q.10. Which of the following voice have greater pitch?

(A) male (B) Female (C) mosquito (D) tiger

Q.11. Mercury is used as thermometric liquid because

(A) it has low specific heat (B) it does not wet the glass tube
(C) it is opaque and bright (D) all the above

Q.12. A thermodynamic system goes from states

$(i)\ P_1, V\ to\ 2P, V$ $(ii)\ P_1, V_1\ to\ 2P, 2V_1$ Then work done in two cases is

(A) zero , zero (B) zero , PV_1 (C) PV_1, zero (D) PV_1 , P_1V_1

Q.13. 1 unit OF atmosphere pressure is equivalent to

(A) 760 to rr (B) 76 cm kg (C) both a & b (D) neither a nor b

Q.14. If the critical angle for the medium of prism is C and angle of prism is A then there will be no emergent ray when

(A) $A < 2C$ (B) $A = 2C$ (C) $A > 2C$ (D) $A \leq 2C$

Q.15. A point object is placed at the centre of a glass sphere of radius 6 $cm\ and\ \mu = 1.5$ The distance of the virtual image from the surface of sphere is:

(A) 2 cm (B) 4 cm (C) 6 cm (D) 12 cm

Q.16. Two point charges of change value φ & q are placed at a distance of x & $\frac{x}{3}$ respectively form a third change of charge value 2q. All charges being in the same straight line The magnitude of φ such that net force experienced by charge q is zero is

(A) $\varphi = 2q$ (B) $\varphi = 4q$ (C) $\varphi = 6q$ (D) $\varphi = 8q$

Q.17. A point P is located 9 cm away from charge $3\mu c$ The work done in bringing a $5\mu c$ charge from infinity to point P will be

(A) 1.5 J (B) 0.15 J (C) 0.015 J (D) 0.0015 J

Q.18. In bringing an electron towards another electron, the electrostatic potential energy of the system

(A) become zero (B) Increases
(C) decreases (D) remains unchanged

Q.19. Two conductors of same length and cross sectional area but different specific resistances ϱ_1 & ϱ_2 are connected in series The equivalent specific resistance of combination is:

(A) $\varrho_1 + \varrho_2$ (B) $\frac{1}{2}(\varrho_1 + \varrho_2)$ (C) $2(\varrho_1 + \varrho_2)$ (D) $\sqrt{\varrho_1 \varrho_2}$

Q.20. A moving coil galvanometer has 150 equal divisions. Its current sensitivity is 100 divisions per milliampere and voltage sensitivity is 2 divisions per milivolt. In order that each division reads 1 volt, the resistance in ohm needed to connected in series with the coil be

(A) 10^3 (B) 10^5 (C) 99995 (D) 9995

Q.21. A conducting circular loop of radius r carries a current i. It is placed in a uniform magnetic field B such that B is perpendicular to the plane of the loop. The magnetic force acting on the loop is

(A) irB (B) $2\pi irB$ (C) zero (D) πirB

Q.22. The magnetic induction at a point at large distance X on axial line of circular coil of small radius carrying current I is 100 gauss. The magnetic induction at distance $2x$ will be

(A) 50 G (B) 100 G (C) 200 G (D) 400 G

Q.23. Regarding electron which of the following is true

$(i)\ \frac{e}{m} = 1.7589 \times 10^{11}\ c/kg$ $(ii)\ e = -1.6 \times 10^{-19} c$

$(iii)\ m = 9.1 \times 10^{-31}\ gm$

(A) Only (i) (B) all (i) , (ii) & (iii) (C) (i) & (iii) (D) (i) & (ii)

Q.24. The dimension of magnetic flux are

(A) $[m^1 L^1 T^2 A^o]$ (B) $[m^1 L^1 T^2 A^{-1}]$

(C) $[m^1 L^2 T^{-2} A^1]$ (D) $[m^1 L^1 T^2 A^1]$

Q.25. The magnetic induction on the axial line of a short magnet at a distance certain distance is B. What is the magnetic induction on its equatorial line at twice the distance

(A) B (B) $B/_2$ (C) $B/_4$ (D) $B/_{16}$

ANSWER KEY SECTION I PHYSICS

Q.	A.	Q.	A.	Q.	A.	Q.	A	Q.	A.
1	D	6	D	11	C	16	D	21	C
2	A	7	B	12	B	17	C	22	A
3	C	8	D	13	C	18	B	23	D
4	C	9	D	14	C	19	B	24	C
5	A	10	C	15	C	20	D	25	D

SECTION-I
PHYSICAL SCIENCES
(CHEMISTRY)

Q.1. Isotopes have same number of ----------

(A) Protons (B) Neutrons
(C) Nucleus (D) Positions

Q.2. Number of orbitals present in third shell is ----------

(A) 1 (B) 3
(C) 9 (D) 18

Q.3. Which of the following is the most electropositive element?

(A) Phosphorus (B) Magnesium
(C) Aluminium (D) Sulphur

Q.4. Which of the following molecules has trigonal planar geometry?

(A) BF_3 (B) NH_3

Q.5. A gaseous mixture was prepared by taking equal mole of CO and N_2. If the total pressure of the mixture was found 1 atmosphere, the partial pressure of the nitrogen in the mixture is - _____

(A) 0.5 atm (B) 0.8 atm
(C) 0.9 atm (D) 1 atm

Q.6. A base as defined by Bronsted theory, is a substance which can ----------

(A) Accept proton (B) Donate proton
(C) Lose a pair of electron (D) Gain a pair of electron

Q.7. The Oxidation state of Cr in $K_2Cr_2O_7$ is ----------

(A) + 7 (B) +3
(C) + 6 (D) + 4

Q.8. Tyndall effect can be observed in a ----------

(A) Solvent (B) Precipitate
(C) Colloidal solution (D) Solution

Q.9. Which colour of light is deviated the maximum in the spectrum obtained with a prism?

(A) Red (B) Yellow
(C) Violet (D) Blue

Q.10. Which of the following properties are shown by carbon dioxide?

(A) Turns lime water milky (B) It is odourless
(C) It is colourless (D) All above

Q.11. When current is plotted against potential difference a straight line passing through the origin is obtained, which of the following laws is verified?

(A) Faraday's law (B) Maxwell's law
(C) Ohm's law (D) Joule's law

Q.12. The process of electrolysis is ----------
(A) Electrophoresis (B) Electroplating
(C) Electrorefining (D) Both (B) and (C)

Q.13. Bronze is an alloy of ----------
(A) Cu and Zn (B) Cu and Sn
(C) Al and Zn (D) Cu and Al

Q.14. Syngas is a mixture of ----------

(A) $CO_2 + H_2$ (B) $CO + H_2$
(C) $CO + CO_2$ (D) $CO + N_2$

Q.15. The highest lattice energy corresponds to ----------

(A) MgO (B) CaO
(C) LiO (D) BaO

Q.16. Borton compounds behave as Lewis acids, because of their ----------

(A) Ionization property (B) Electron deficient nature
(C) Acidic nature (D) Covalent nature

Q.17. IUPAC name of $CH_2CH_2CH_2CH(CH_2)COCH_3$ is----------

(A) Isohexanone (B) Heptanone
(C) Hexan-5-one (D) 3-methylhexan-2-one

Q.18. The structure of benzene is ----------

(A) Tetrahedral (B) Planar
(C) Trigonal bipyramidal (D) Linear

Q.19. In which of the following compounds, addition of HBr in presence of peroxide will have no effect?

(A) 1 – butane (B) 2 – butane
(C) Isobutene (D) 2 – pentene

Q.20. Which of the following organic compounds exhibits acidic character?

(A) $CH_3 - C = CH$ (B) $CH_3 - C = C - CH_3$
(C) $CH_2 = CH_2$ (D) $CH_3 - CH_3$

Q.21. An Isomer of ethanol is ----------

(A) Ethanal (B) Dimethyl ether
(C) Diethyl ether (D) Methanol

Q.22. Cyanide and isocyanide are isomers of type ----------

(A) Tautomer (B) Positional
(C) Structural (D) Functional

Q.23. Where does the cellular respiration take place?

(A) Lysosomes (B) Mitochondria
(C) Chlorophyll (D) Ribosomes

Q.24. Which unicellular fungus shows budding?

(A) Mucor (B) Yeast
(C) Amoeba (D) None of these

Q.25. Ethanoic acid ----------

(A) is colorless (B) has a smell of ammonia
(C) has smell of rotten eggs (D) has a vinegar like odour

ANSWER KEY TO SECTION-I -CHEMISTRY

Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A
1	A	6	A	11	C	16	B	21	A
2	C	7	C	12	D	17	D	22	D
3	B	8	C	13	A	18	B	23	B
4	A	9	C	14	B	19	B	24	B
5	A	10	D	15	B	20	A	25	D

SECTION-II
MATHEMATICS

Q.1. $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \cdots$ are in A.P. What is S_{10}.

(A) $\frac{7}{4}$ (B) $\frac{65}{12}$ (C) $\frac{4}{7}$ (D) $\frac{-65}{12}$

Q.2. what is k' if $x = 4$ is the solution of the equation $3x^2 + kx - 2 = 0$

(A) $\frac{21}{2}$ (B) $\frac{-21}{2}$ (C) $\frac{23}{2}$ (D) $\frac{-23}{2}$

Q.3. Two dice are thrown what is the probability of the events the sum of the numbers on their upper faces is multiple of 7.

(A) $\frac{1}{8}$ (B) $\frac{7}{9}$ (C) $\frac{1}{6}$ (D) $\frac{1}{9}$

Q.4. If one root of the quadratic equation $x^2 + 6x + k = 0$ is $h + 2\sqrt{6}$ what are the values of h and k.

(A) $h = 3,\ k = 15$ (B) $h = -3,\ k = 15$

(C) $h = 3,\ k = -15$ (D) $h = -3,\ k = -15$

Q.5. what is the discriminant for $x^2 - 6x + 7 = 0$

(A) 8 (B) -8 (C) 6 (D) -6

Q.6. The value of mean is 101 and median is 100. What is the value of mode.

(A) 89 (B) 87 (C) 98 (D) 78

Q.7. Two digit number are formed from the digits 0 , 1 , 2 , 3 , 4 where digits are not repeated. What is the probability of the events that the number formed is greater, than 40.

(A) $\frac{3}{16}$ (B) $\frac{5}{16}$ (C) $\frac{7}{16}$ (D) $\frac{1}{16}$

Q.8. The sum of the first 55 terms of an A.P. is 3300 what is 28^{th} term.

(A) 50 (B) 40 (C) 60 (D) None

Q.9. If $12x + 13y = 29$, $13x + 12y = 21$ what is $x + y$.

(A) -2 (B) 2 (C) 4 (D) -4

Q.10. What is the probability that a leap year has 53 Sundays?

(A) $\frac{2}{7}$ (B) $\frac{7}{12}$ (C) $\frac{3}{7}$ (D) $\frac{4}{7}$

Q.11. If the value of the determinant $\begin{vmatrix} -3 & m \\ -6 & 9 \end{vmatrix}$ is 21. Find m.

(A) 4 (B) -8 (C) 8 (D) -4

Q.12. What is the median if N = 30 , L = 20 , f = 10 C.F. =13 and h=10.

(A) 23 (B) 22 (C) 24 (D) 25

Q.13. What is the slope of a line having its inclination 150^0

(A) $\sqrt{3}$ (B) $-\sqrt{3}$ (C) $\frac{\sqrt{3}}{2}$ (D) $\frac{-\sqrt{3}}{2}$

Q.14. What is the distance between the two centers with distance 8 cm and 6 cm. if they touch each other internally.

(A) 1 (B) 2 (C) 3 (D) 4

Q.15. The volume of a cube is 1000 cm^3. What is its total surface area?

(A) 500 Sq. cm (B) 5500 Sq. cm

(C) 600 Sq. cm (D) None

Q. 16. If Pvq is T and (pvq) →q is F, then the truth values of p and q are respectively

(A) T, T (B) T, F (C) F, T (D) F, F

Q.17. if $A = \begin{bmatrix} a & 0 & 0 \\ 0 & a & 0 \\ 0 & 0 & a \end{bmatrix}$ then |A||adj A| =

(A) a^3 (B) a^6 (C) a^9 (D) a^{27}

Q.18. The principal solution of $\sqrt{3}\,\sec x + 2 = 0$ are

(A) $\frac{\pi}{6}, \frac{11\pi}{6}$ (B) $\frac{5\pi}{6}, \frac{7\pi}{6}$ (C) $\frac{\pi}{3}, \frac{2\pi}{3}$ (D) $\frac{5\pi}{3}, \frac{4\pi}{3}$

Q.19. The general solution for $\cos 3x = \frac{1}{\sqrt{2}}$ is

(A) $2n\pi \pm \frac{\pi}{4}$ (B) $n\pi + (-1)^n \frac{\pi}{4}$

(C) $\frac{n\pi}{2} \pm (-1)^n \frac{\pi}{12}$ (D) $\frac{2n\pi}{3} \pm \frac{\pi}{12}$

Q.20. In $\Delta ABC \frac{\sin B}{\sin(A+B)} =$

(A) a/b (B) c/b (C) b/c (D) $\frac{b}{a+b}$

Q.21. $\sin^{-1}\left(\frac{8}{17}\right) + \sin^{-1}\left(3/5\right) =$

(A) 1 (B) 0 (C) $\tan^{-1}\left(\frac{77}{36}\right)$ (D) $\sin^{-1}\left(\frac{17}{5}\right)$

Q.22. The equation $(x+y)^2-(x^2+y^2)$ represents

(A) a circle (B) two lines (C) two parallel lines
(D) two mutually perpendiculars lines

Q.23. The gradient of one of the lines $ax^2+2hxy+by^2=0$ is twice that of the other then

(A) $h^2=ab$ (B) $h=a+b$ (C) $8h^2=9ab$ (D) $9h^2=8ab$

Q.24. The equation to the pair of lines through $(1,-1)$ and perpendicular to the pair of lines

$x^2-xy-2y^2=0$

(A) $2x^2-xy+y^2+5x+y+2=0$ (B) $2x^2-xy-y^2-5x-y+2=0$
(C) $x^2-xy+2y^2-5x-y=0$ (D) $2x^2-xy-y^2+5x+y-2=0$

Q.25. If $ax^2-y^2+4x-y=0$ represents a pair of lines. then $a=$

(A) -16 (B) 16 (C) 4 (D) – 4

Q.26. Area of triangle formed by the lines $x^2-y^2=0$ and $x+8=0$ is

(A)32 (B) 64 (C) 31 (D) 65

Q.27. If the position vectors of the vertices of a triangle be

$2\hat{i}+4\hat{j}-\hat{k}$, $4\hat{i}+5\hat{j}+\hat{k}$ and $3\hat{i}+6\hat{j}-3\hat{k}$ then the triangle is

(A) Right angled (B) Isosceles
(C) Equilateral (D) Right angled isosceles

Q.28. The angle between the vector's $\bar{a}+\bar{b}$ and $\bar{a}-\bar{b}$ when $\bar{a}=\hat{i}+\hat{j}+4\hat{k}$, $\bar{b}=\hat{i}-\hat{j}+4\hat{k}$ is

(A) $\frac{\pi}{2}$ (B) $\frac{\pi}{4}$ (C) $\frac{\pi}{6}$ (D) $\pi/_3$

Q.29. Let $\propto, \beta, \gamma$ be distinct real numbers. The points with position vectors

$\propto \hat{i}+\beta\hat{j}+\gamma\hat{k}$, $\beta\hat{i}+\gamma\hat{j}+\alpha\hat{k}$, $\gamma\hat{i}+\alpha\hat{j}+\beta\hat{k}$

(A) Are collinear (B) form an equilateral triangle
(C) for a right angled triangle (D) form a scalene triangle

Q.30. The volume of parallelepiped whose co-terminus edges are $\bar{a}=\hat{i}+\hat{j}$, $\hat{b}=\hat{j}+\hat{k}$, $\hat{c}=\hat{k}+\hat{i}$ is

(A) 1 Cu. units (B) 9 Cu. units
(C) 4 Cu. units (D) 2 Cu. units

Q.31. If $\bar{a}.\hat{i}=4$ then $(\bar{a}\times\hat{j})\cdot(2\hat{j}-3\hat{k})=$

(A) 12 (B) 2 (C) 0 (D) -12

Q.32. The line makes angles $\propto, \beta, \gamma$ with the co-ordinate axes if $\propto + \beta = 90°$then $\gamma =$

(A) 0 (B) 90° (C) 180° (D) 315°

Q.33. Perpendicular distance of the point (3, 4, 5) from y axis is

(A) $\sqrt{34}$ (B) $\sqrt{41}$ (C) 4 (D) 5

Q.34. The angle between a diagonal of a cube and the diagonals of a face of the cube is

(A) $\cos^{-1}\left(\frac{1}{\sqrt{3}}\right)$ (B) $\cos^{-1}\left({}^{2}/_{3}\right)$

(C) $\cos^{-1}\left({}^{\sqrt{2}}/_{3}\right)$ (D) $\cos^{-1}\left(\frac{1}{3}\right)$

Q.35. If the lines $\frac{x-1}{-3} = \frac{y-2}{2k} = \frac{z-3}{2}$, $\frac{x-1}{3k} = \frac{y-5}{1} = \frac{z-6}{-5}$ are right angle then k =

(A) -10 (B) $\frac{10}{7}$ (C) $-\frac{10}{7}$ (D) $\frac{-10}{7}$

Q.36. In $\Delta ABC, \angle B = 30°, \angle C = 60°$ If $BC = 10\sqrt{3}$ cm. then $\ell(AB) =$?

(A) $5\sqrt{3}$ cm (B) 15 cm (C) 7.5 cm (D) 10 cm

Q.37. In which type of triangle does the circumcentre, orthrocentre and in centre lies on a line?

(A) An acute angle triangle (B) An isosceles triangle
(C) A right angled triangle (D) An obtuse angled triangle

Q.38. $A(k, 5), B(-1,3), C(-2,4)$ and $D(3, -6)$. What is the value of k is line AB is parallel to line CD?

(A) 1 (B) 2 (C) -2 (D) 3

Q.39. The diameter of the base of cone is 14 cm and its height is 24 cm. what is its curved surface area?

(A) 528 cm^2 (B) 1046 cm^2 (C) 550 cm^2 (D) 1100 cm^2

Q.40. The volume of parallelepiped whose co-terminous edges are $\bar{a} = i + j, \bar{b} = \bar{j} + \bar{k}, \bar{c} = \bar{k} + i$ is.

(A) 1 Cu. units (B) 9 Cu. units (C) 4 Cu. units (D) 2 Cu. units

Q.41. What is the coefficient of x^{-3} in $\left(x - \frac{1}{2x}\right)^5$

(A) $\frac{5}{16}$ (B) $\frac{-5}{16}$ (C) $\frac{3}{16}$ (D) none

Q.42. What is the value of $\lim_{x \to {}^{1}/_{a}} \frac{a^4x^4-1}{a^3x^3-1}$

(A) $\frac{3}{4}$ (B) $\frac{-3}{4}$ (C) $\frac{5}{3}$ (D) $\frac{4}{3}$

Q.43. What is $\left(\frac{d2y}{dx^2}\right)_\theta = \pi/2$ if $x = \sin\theta$, $y = \sin^3\theta$

(A) 4 (B) 6 (C) -6 (D) -4

Q.44. What is the maximum value of $f(x) = x^2e^x$.

(A) $\frac{2}{e^2}$ (B) $2e^2$ (C) $\frac{4}{e^2}$ (D) $4e^2$

Q.45. what is $\int \frac{1}{\sin^2 x \cdot \cos^2 x}\, dx$

(A) $\tan x + \cos x + c$ (B) $\tan x - \cos x + c$ (C) $\tan x$ (D) none

Q.46. what is the value of $\int_0^{\pi/2} \sin^2 x \cos^2 x\, dx$

(A) $\frac{2}{15}$ (B) $\frac{-2}{15}$ (C) $\frac{3}{15}$ (D) $\frac{-3}{15}$

Q.47. what is the order and Degree $\sqrt{1 + \frac{1}{\left(\frac{dy}{dx}\right)^2}} = \left(\frac{d^2y}{dx^2}\right)$

(A) order = 2 , degree = 3 (B) order = 3 , degree = 3
(C) order = 3 , degree = 2 (D) none

Q.48. What is the integrating factor of $ydx + (x - y^2)dy = 0$

(A) y (B) –y (C) x (D) –x

Q.49. $X \sim B(n = 10, P)$ If $E(X) = 8$ what is P.

(A) 0.7 (B) 0.8 (C) 0.9 (D) 0.7

Q.50. $x^5y^7 = (x + y)^{12}$ then $\frac{dy}{dx}$ is

(A) $\frac{x}{y}$ (B) $\frac{y}{x}$ (C) $\frac{-x}{y}$ (D) $\frac{-y}{x}$

ANSWER KEY SECTION-II MATHS

Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A.
1	B	11	C	21	C	31	D	41	A
2	D	12	B	22	D	32	B	42	D
3	C	13	B	23	C	33	A	43	B
4	D	14	A	24	B	34	C	44	C
5	A	15	C	25	B	35	D	45	B
6	C	16	B	26	B	36	B	46	A
7	A	17	C	27	D	37	B	47	A
8	C	18	B	28	A	38	C	48	A

9	B	19	D	29	B	39	C	49	B
10	A	20	C	30	D	40	A	50	B

SECTION-II
BIOLOGY

Q.1. DNA is absent in.

(A) Root of hair
(B) Spermatozoa
(C) Matured RBC
(D) Ovum

Q.2 Globulin in human blood is useful for

(A) Osmotic balance
(B) Transport of O_2
(C) Defence Mechanism
(D) Clotting of blood

Q.3 Lymph consists

(A) plasma without protein
(B) no plasma
(C) more WBC's and No RBC
(D) more RBC's and No WBC's

Q.4 Hemoglobin of healthy man is _____ gms/100ml. of blood.

(A) 5-10 gms/100 ml.
(B) 20-30 gms/100 ml.
(C) 18-20 gms/100 ml.
(D) 12-16 gms/100 ml.

Q.5 Uricotelic animals are.

(A) Lizard, parrot and cockroach
(B) Rohu, Frog
(C) man, monkey, cattle
(D) Shark, Mollusca

Q.6 Flame cells are excretory organs of.

(A) prawn
(B) planaria
(C) silver fish
(D) frog

Q.7 Largest cranial nerve is

(A) optic
(B) oculomotor
(C) vagus
(D) facial

Q.8 Exocrine glands secretes

(A) Hormone
(B) Enzymes
(C) Waxy substances
(D) Watery fluid

Q.9 Chemically hormones are

(A) Amines, proteins, steroids
(B) Vitamins, Steroids
(C) Enzymes, carbohydrates
(D) carbohydrates lipids

Q.10 Which of the following are **NOT** a function of Insulin

(A) Control of diabetes
(B) Control of blood sugar
(C) Control of blood cells
(D) Control of glycosuria

Q.11 An example of Autonomous Nervous System is

(A) Action of chewing of food
(B) Action of eye-lids
(C) Action of knee-jerk
(D) Peristalsis of Intestines

Q.12 Acromegaly is an example of hypersecretion of

(A) STH
(B) TSH
(C) ACTH
(D) FSH

Q.13 Length of Wolffian duct is

(A) 40 cms.
(B) 4 meters.
(C) 60 cms.
(D) 6 meters

Q.14 Gland of TYSON is present _____

(A) In the neck of penis
(B) In the neck of ovary
(C) In the urethra
(D) In the uterus

Q.15 Human egg is

(A) Alecithal
(B) Megalecithal
(C) Microlecithal
(D) Telolecithal

Q.16 Horse shows _____ adaptations

(A) Cursorial
(B) Fossorial
(C) Aerial
(D) Terrestrial

Q.17 Fossorial adaptations are present in

(A) Horse
(B) Rat
(C) Cat
(D) Goat

Q.18 Modern self assembly theory is put forth by

(A) Fox and Dose
(B) Mendel
(C) Darwin
(D) Oparin

Q.19 Earth was originated about _____ years ago

(A) 1 Billion
(B) 3 Billion
(C) 4.6 Billion
(D) 4.6 Million

Q.20 Struggle between cattle and cattle is _____ struggle

(A) Inter-specific
(B) Intra-specific
(C) Environmental
(D) Co-operative

Q.21 Human external muscles are _____

(A) Useful organs
(B) Harmful organs
(C) Vestigial organs
(D) Hearing organs

Q.22 Autosomes are responsible for

(A) Sex determination
(B) Determination of Sex linkage
(C) Determination of book characters
(D) Determination of genes

Q.23 Primary constriction on chromosome is _____

(A) Chromatin
(B) Chromomere
(C) Centromere
(D) Telomere

Q.24 In birds sex determination takes place by heterogametic

(A) Male
(B) Female
(C) Both Male and Female
(D) Autosomes

Q.25 In poultry farm determination of male and female takes place by.

(A) Walking method
(B) Went method
(C) Sound method
(D) Crown method

Q.25 In poultry farm determination of male and female takes place by.

(A) Walking method
(B) Went method
(C) Sound method
(D) Crown method

Q.26 VNTRs is a

(A) Variable Number of Tandem Records
(B) Variable Number of Tandem Repeats
(C) Variety Number of Typical Records
(D) Variety Number of Tandem Repeats

Q.27 DNA Amplification is _____ No of DNA

(A) Decreasing
(B) Increasing
(C) Fragmentation
(D) Destroying

Q.28 Physiological barrier is a example of

(A) Acquired Immunity (C) Specific Immunity
(B) Innate Immunity (D) Non Immunity

Q.29 Killer T-cells are

(A) Helpful Cells (C) Memory Cells
(B) Cytotoxic Cells (D) Suppressor Cells

Q.30 Nili is an example of

(A) Cattle (C) Goat
(B) Sheep (D) Buffalo

Q.31 In beehive drones are

(A) Female bee (C) Male bee
(B) Worker bee (D) Queen bee

Q.32 Pollination by Honeybee is _____ pollination

(A) Anemophilous (C) Ornithophilous
(B) Entomophilous (D) Hydrophilous

Q.33 Osmoregulation mostly takes place in

(A) Henle's loop (C) DCT
(B) PCT (D) Collecting Tubule

Q.34. Volume of Brain (Cranial capacity) is

(A) 1000 – 1200 c.c. (C) 1300 – 1500 c.c
(B) 1200 – 1300 c.c (D) 1500 – 1700 c.c

Q.35. Gemmule formation takes place among

(A) Hydra (C) Water sponges
(B) Fish (D) Frogs

Q.36. Minamata Disease is caused by ----------

(A) Sodium (C) Mercury
(B) Chlorine (D) Minerals salts

Q.37. Great Indian Bustard is a example of ----------

(A) Rare species
(B) Vulnerable species
(C) Indeterminate species
(D) Useful species

Q.38. Sacculina is parasite lives on

(A) Man
(B) Dogs
(C) Crass
(D) Sea anemone

Q.39. Relation between two partner's in which both the partners are benefited is called as

(A) Mutualism
(B) Commensalism
(C) Parasitism
(D) Predators

Q.40. Difference between organisms of same species is called as

(A) Compitition
(B) Variation
(C) Natural selection
(D) Population

Q.41. Treponema pallidum causes

(A) Gonorrhoea
(B) Birth control
(C) Dermatophytosis
(D) Syphilis

Q.42. Long form of IUCD is

(A) Intra Uterine contraceptive Device
(B) Indian union community Development
(C) International union community Development
(D) International union commutative Development

Q.43. Aerosome consist enzyme

(A) Permease
(B) Hydrolygase
(C) Hyaluronidase
(D) Transacetylase

Q.44. Ovulation takes place on ---------- day of menses

(A) 5^{th} day
(B) 14^{th} day
(C) 28^{th} day
(D) 9^{th} day

Q.45. Peptide hormone Thymasin is secreted by

(A) Thyroid gland
(B) Thymus gland
(C) Adrenal gland
(D) Parathyroid gland

Q.46. Organs of corti are present in

(A) eye-retinal membrane (C) Cochlea of ear
(B) Semicircular canal (D) eye- Sclerotic layer

Q.47. Baroreceptor is ----------

(A) Heart (C) Wall of carotid body
(B) Skin (D) Kidney

Q.48. Afferent Neurons are called as

(A) Motor Neuron (C) Receptor Organs
(B) Mixed Neuron (D) Sensory Neuron

Q.49. Shellac is ---------- form of lac

(A) Natural (C) artificial
(B) Pure (D) Contaminated

Q.50. Most popular Indian carp is

(A) Rohu (C) Mrigal
(B) Cutla (D) eels

ANSWER KEY SECTION II BIOLOGY

Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A.
1	C	11	D	21	C	31	C	41	D
2	C	12	A	22	C	32	B	42	A
3	C	13	D	23	C	33	A	43	C
4	D	14	A	24	B	34	C	44	B
5	A	15	C	25	B	35	C	45	B
6	B	16	A	26	C	36	C	46	C
7	C	17	B	27	B	37	A	47	C
8	B	18	A	28	B	38	C	48	D
9	A	19	C	29	B	39	A	49	B
10	C	20	B	30	D	40	B	50	A

SECTION-III
ENGLISH LANGUAGE

Directions (Qs, 1.-10): Choose the most appropriate alternatives to complete/correct the following sentences.

1. He gave _____ a beautiful gift on Mother's Day.

   (a) his mother
   (b) to his mother
   (c) for his mother
   (d) at his mother

2. How can you say that you didn't receive the invitation card? I _____ on Sunday the invitation card

   (a) gave you
   (b) gave to you
   (c) gave it to you
   (d) I had given you

3. She _____ a big surprise.

   (a) (a) gave to me
   (b) (b) gave for me
   (c) (c} gave me
   (d) (d) gave at me

4. Mongoose bit snake.

   (a) mongoose bit the snake
   (b) the mongoose bit snake
   (c) The mongoose bit a snake
   (d) the mongoose bit a snake

5. Teacher praised student

   (a) Teacher praised the student
   (b) The teacher praised the student
   (c) The teacher praised student
   (d) the teacher praised the student

6. She is busy right now. _____ on the computer.

(a) She works
(b) She is work
(c) She working
(d) She is working

7. My father _____ the Chief Guest well.

(a) is Know
(b) Knows
(c) is Knowing
(d) Know

8. When _____ her last ?

(a) you met
(b) did you met
(c) did you meet
(d) did you meted

9. _____ like coffee ?

(a) Does you
(b) Are you
(c) Do you
(d) you

10. She doesn't like chocolate,_____

(a) doesn't she?
(b) does she?
(c) isn't it?
(d) isn't she?

Only one of the four items below each sentence will complete the sentence correctly. Choose the correct alternative.

11. If we_____ now, we would miss the last train.

(a) won't start
(b) don't start
(c) wouldn't start
(d) didn't start

12. You_____ cross the road when the lights are red.

(a) can
(b) must
(c) mustn't
(d) needn't

13. I'm right, _____ ?

(a) amn't I
(a) aren't I
(b) isn't it
(c) am I

14. Look at _____

(a) aeroplanes in sky
(b) aeroplanes in the sky
(c) the aeroplanes in the sky
(d) the aeroplanes in sky

15. She gave him _____ he wanted

(a) that
(b) that which
(a) (c) that what
(c) what

16. Amartya Sen _____ the Nobel prize for Economics in 1998.

(a) awarded
(b) is awarded
(c) was awarded
(d) has been. awarded

17. I wish I _____ in Mauritius now.

(a) am
(b) was
(c) am being
(d) have been

18. If I _____ it, I couldn't have believed it.

(a) don't see
(b) didn't see
(c) havent't seen
(d) hadn't seen

19. It's time we_____.

(a) leave
(b) left
(c) would leave
(d) (d)should leave

20. I _____ their offer if I were you.

(a) will accept
(a) would accept
(b) accept
(c) accepted

21. I have never seen him _____ cheerful.

(a) so
(b) as
(c) such
(d) like

22. Have some more rice, _____ ?

(a) will you
(b) won't you
(c) don't you
(d) haven't you

23. I'm just going out, so I can't stop _____.

(a) to talk
(b) talking
(c) talk
(d) for talking

24. He devotes his free time _____ stamps.

(a) to collect
(b) collecting
(a) for collecting
(c) to collecting

25. I must go _____this afternoon.

(a) shopping
(b) shop
(c) to shopping
(d) for shopping

Choose the correct alternatives In the following:

26. Which of the following are not parts of speech?

A. Noun
B. Verb
C. Adverb
D. Preposition
E. Conjunction
F. Interjection

(a) a, b, c and d
(b) e and f
(c) All of the above
(d) None of the above

27. They are just a group of related words that do not express a complete thought. They do not have a subject and predicate pair.'

The above points refer to:

(a) Sentences
(b) Phrases
(c) Conjunctions
(d) Prepositions

28. Usually takes a singular verb.

(a) Proper Noun
(b) Common Noun
(c) Collective Noun
(d) Abstract Noun

29. _____is the study of touching as non-verbal communication.

(a) Non-Verbal
(b) Prosodic
(c) Touches
(d) Haptics

30. A/n _____ is a word which connects words, phrases, clauses or Sentences.

(a) Interjection
(b) Conjunction
(c) Preposition
(d) Adjective

31. The process of interpretation is known as _____

(a) encoding
(b) receiving
(c) decoding
(d) sending.

32. _____ is the foundation of language learning which is essential for effective communication.

(a) Thesaurus
(b) Grammar
(c) Vocabulary
(d) Lexicon

33. In the sentence, "While cleaning up the mess, Jughead dumped all the coke-cans into the trash-bin.", _____ is the object of preposition 'into' (receiver of the action)

(a) While
(b) Jughead
(c) Coke-cans
(a) Trash-bin

34. _____ are the words, which tell us about the relations of the nouns, pronouns, and adjective in a sentence.

(a) Conjunctions
(b) Interjections
(c) Prepositions
(d) Adverbs

35. _____ is also called as 'Reported Speech'.

(a) Informal Speech
(b) Formal Speech
(c) Indirect Speech
(d) Direct Speech

36. A _____ indicates. the action done by the subject

(a) Verb
(b) Adjective
(a) Adverb
(c) Noun

37. _____ add more meaning to the verb, adjective; or another adverb in a sentence.

(a) Nouns
(b) Pronouns
(c) Adverbs
(d) Adjectives

Put the verbs in their correct forms:

38. It _____ (rain) _____ in the West the next night,

(a) will rain
(b) would rain
(c) rains
(d) rained

39. We _____ (ride) _____ our bike soon.

(a) ride
(b) rode
(c) rides
(d) will ride

40. My father _____(clean) _____his car. It still looks dirty.

(a) will clean
(b) would clean
(c) has cleaned
(d) is cleaning

Put the following fragments in the correct order to make a sensible sentence.

41. The teacher / collects / the homework / every morning.
1 2 3 4

(a) 1, 3, 4, 2
(b) 1, 2, 3, 4
(c) 1,4, 1, 2
(d) 3, 4, 2, l

42. now / the question / answering / we are.
1 2 3 4

(a) 1,3,4,2
(b) 1,2,3.4
(c) 1, 4, 3, 2
(d) 3, 4, 2, 1

43. never / my cat / in my bed / sleeps.
1 2 3 4

(a) 1, 3, 4, 2
(b) 1, 2, 3. 4
(c) 2,1, 4,3
(d) 3, 4,2,1

Select the correct alternatives from the following.

44. If you drove from Mumbai to Delhi,

(a) which way will you go? .
(b) which way would you go?
(c) which way would you have gone?
(d) None of the above.

45. If you wait a minute,

(a) I'll go with you.
(b) I'd go with you.
(c) I'd have gone with you.
(d) I must have gone with you.

46. You would have slept much better _____,
(a) if you'll take your medicine.
(b) if you took your medicine.
(c) If you'd taken your medicine.
(d) All the above.

47. People said, "The President is ill."

(a) People say that the President is ill.
(b) People said that the President is ill.
(c) People said. that the President was ill. .
(d) People said that the President would be ill.

48. The mechanic has not repaired the DVD recorder.

(a) The DVD has not been recorded by the mechanic.
(b) The DVD recorder has already been repaired by the mechanic.
(c) The DVD recorder was not repaired by the mechanic.
(d) The DVD recorder has not been repaired by the mechanic.

49. Sue puts the rucksack on the floor.

(a) The floor is not put on the rucksack by Sue.
(b) Toe rucksack was put on the floor by Sue.
(c) Sue is put on the floor by the rucksack.
(d) The rucksack is put on the floor by Sue.

50. The teacher is not going to teach you now.

(a) The teacher has not been teaching you now.
(b) The teacher has not taught now.
(c) You are not being taught by the teacher now.
(d) You are not going to be taught by the teacher now.

ANSWER KEY TO SECTION-III - ENGLISH LANGUAGE

1	**A**	**11**	**B**	**21**	**A**	**31**	**C**	**41**	**B**
2	**C**	**12**	**C**	**22**	**B**	**32**	**B**	**42**	**C**
3	**C**	**13**	**A**	**23**	**D**	**33**	**A**	**43**	**C**
4	**C**	**14**	**C**	**24**	**C**	**34**	**A**	**44**	**B**
5	**B**	**15**	**C**	**25**	**D**	**35**	**C**	**45**	**A**
6	**D**	**16**	**C**	**26**	**D**	**36**	**A**	**46**	**C**
7	**B**	**17**	**B**	**27**	**B**	**37**	**C**	**47**	**C**
8	**C**	**18**	**D**	**28**	**C**	**38**	**A**	**48**	**D**
9	**C**	**19**	**B**	**29**	**D**	**39**	**D**	**49**	**D**
10	**B**	**20**	**B**	**30**	**B**	**40**	**C**	**50**	**D**

SECTION-IV
REASONING

Q.1. What is the missing letter?

Z Y A _ B W C

(A) D (B) X (C) P (D) T

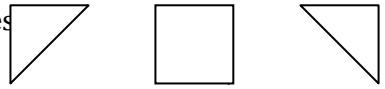
Q.2. What number continues the series?

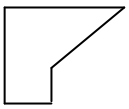
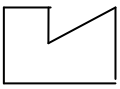
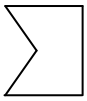
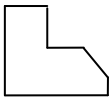
¼, ½, ¾, _

(A) 1 (B) $\frac{5}{4}$ (C) $\frac{3}{2}$ (D) $\frac{2}{3}$

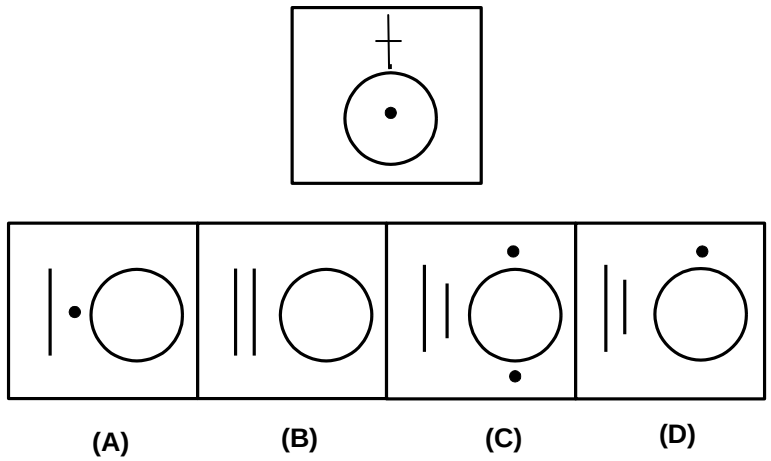
Q.3. Cross out the word that does not fit in with others.

(A) I (B) you (C) it (D) her

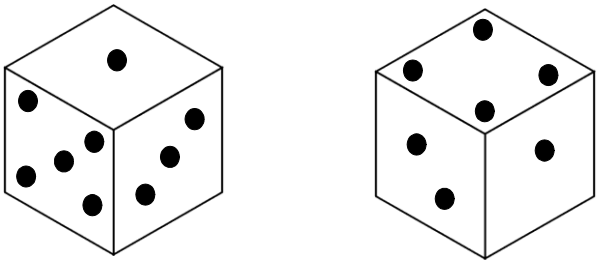
Q.4. The figure that can be formed from the pieces  is

(A)  (B)  (C)  (D) 

Q.5. Which of the following alternatives will exactly make up the key figure?



Q.6. Two positions of a dice are shown below. When there are two dots at the bottom, the number of dots at top will be

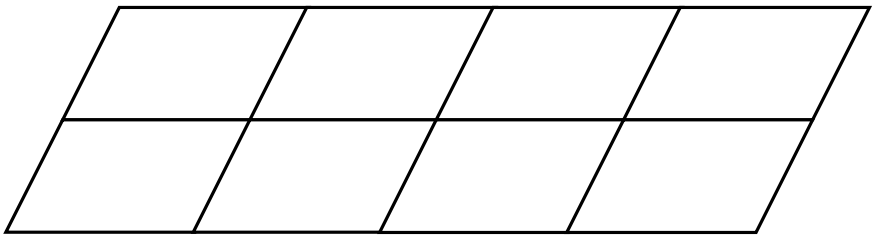


(A) 2 (B) 3 (C) 5 (D) 6

Q.7. A cube painted green on all faces is cut into 27 small cubes of equal sizes. How many cubes are painted on one face only?

(A) 1 (B) 6 (C) 8 (D) 12

Q.8. How many parallelograms are there in the following figure.



(A) 24 (B) 26 (C) 30 (D) 20

Q.9. Which of the following statements are facts?

1. Peacock is a beautiful bird.
2. There are twelve months in a year.
3. There are seven stages of human life.
4. A thing of beauty is joy forever.

(A) 1 and 2 (B) 2 only (C) 2 and 4 (D) all four

Q.10 Examine each inference separately in the context of the passage.

Rabies is a disease transmitted to man and animals through the bite of a rabies infected animal, most commonly by dogs. It is caused by a virus present in the saliva of the infected animal which gets deposited in the wound of the bite victim, multiples and travels towards brain and spinal cord. If not treated, about half of such cases develop rabies. Very few

laboratory tests are available for the diagnosis of rabies in India. Precautionary measures include prompt washing of the dog bite wound with soap and water. The wound is also treated with cetavlon: tincture of iodine or spirit.

Q.10. The governments and local bodies should expedite measures to catch and kill stray dogs as a preventive measure

(A) Definitely false (B) Definitely true (C) Probably false (D) Data in adequate

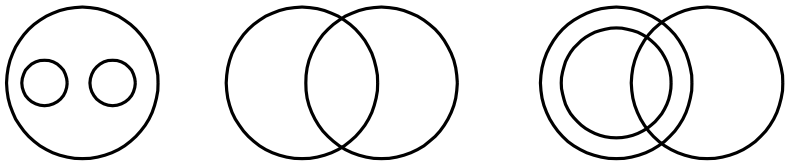
Q.11. Rabies are be transmitted from any animal to the other through open cuts and wounds
(A) Definitely false (B) Definitely true (C) Probably false (D) Data in adequate

Q.12. The bite of rabies infected animal to a healthy animal definitely results in spread of rabies.
(A) Definitely true (B) Probably true (C) Definitely false (D) Data in adequate

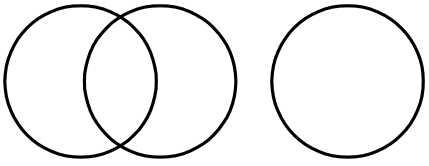
Q.13. The saliva of the house dogs should be periodically tested for the detection of rabies
(A) Probably true (B) Probably false (C) Definitely true (D) Data in adequate

Q.14. Western countries have well equipped laboratory tests to detect rabies.
(A) Definitely false (B) Data in adequate (C) Probably true (D) Definitely true

Q.15. Which of the following diagrams correctly represents Elephants, Wolves, Animals?



(a) (b) (c)



(d)

Q.16. What is related to Graduate in the same way as Cassock is related to Priest?

(A) Cap (B) Tie (C) Coast (D) Gown

Q.17. Reena is twice as old as Sunita. Three years ago, she was three times as old as Sunita. How old is Reena Now?

(A) 6 years (B) 7 years (C) 8 years (D) 12 years

Q.18. 19 , 2 , 38 , 3 , 114 , 4 , ?

(A) 228 (B) 256 (C) 352 (D) 456

Q.19 If Kamal says, "Ravi's mother is the only daughter of my mother", How is kamal related to Ravi?

(A) Father (B) Grand Father (C) Brother (D) None of these

Study the following information and answer the questions (20 to 24)

Rohit , Kunal , Ashish and John are students of a school. Three of them stay far from the school and one near it. Two study in class IV, one in class V and one in class VI. They study Hindi, Mathematics social science and science. One is good at all the four subjects while another is weak in all of these. Rohit stays far from the school and is good at mathematics only while Kunal is weak in Mathematics only and stays close to the school. Neither of these two nor Ashish studies in class VI. One who is good at all the subjects studies in class V.

Q.20. Name the boy who is good at all the subjects.

(A) Rohit (B) Kunal (C) Ashish (D) John

Q.21. Name the boy who is weak in all the subjects

(A) Rohit (B) Kunal (C) Ashish (D) John

Q.22. Which two boys are good at Hindi?

(A) Rohit and Kunal (B) Kunal and Ashish

(C) Ashish and John (D) John and Rohit

Q.23. Which two boys are good at Mathematics?

(A) Rohit and Ashish (B) Kunal and Ashish

(C) John and Ashish (D) Rohit and John

Q.24. Other than Rohit and the boy good at all the subjects, who else stays far from the school?

(A) Rohit (B) Kunal (C) Ashish (D) John

Q.25. P is 300 km eastward of O and Q is 400 km north from O. R is exactly in the middle of Q and P. The distance between Q and R is

(A) 250 km (B) 250 $\sqrt{2}$ km (C) 300 km (D) 350 km

ANSWER KEY TO SECTION-IV - REASONING

Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A.
1	B	6	B	11	B	16	D	21	D
2	A	7	B	12	A	17	D	22	B
3	D	8	C	13	D	18	D	23	A
4	A	9	B	14	B	19	D	24	D
5	D	10	D	15	A	20	C	25	A

SECTION-V
GENERAL KNOWLEDGE

Q.1. "Inning" is associated with which of the following games?

(A) Cricket (B) Baseball (C) Polo (D) Hockey

(Note: The term " INNINGS" is used in cricket)

Q.2. If 4th Jan 2008 falls on Friday. What day will fall on 4th Jan, 2009?

(A) Friday (B) Saturday (C) Sunday (D) Monday

Q.3. The international symbol of the awareness of which disease is the "RED RIBBON"?

(A) Cancer (B) Aids (C) Hepatitis (D) Swine flu

Q.4. Who was the first batsman to be given out by the "Third Umpire"?

(A) Sachin Tendulkar (B) Brain Lara
(C) Wasim Akram (D) Mohammed Azharuddin

Q.5. "D I E T" is the parliament of which country?
(A) South korea (B) Germany (C) Japan (D) Vietnam

Q.6. At what temperature celcius is same as Fahrenheit?

(A) -10 (B) – 20 (C) – 30 (D) – 40

Q.7. Which is the latest country on the world map?

(A) East Timor (B) Maldives (C) South sudan (D) Siberia

Q.8. P A N stands for:

(A) Pure Account Number (B) Personal Account Number
(C) Data Insufficient (D) Permanent Account Number

Q.9. Which English alphabet should come in the place marked (?) A, C, F, J, ?
(A) M (B) N (C) O (D) P

Q.10. Who is the author of the book "India Wins"

(A) Pandit Jawaharlal Nehru (B) Rajendra Prasad
(C) Abdul Kalam Azad (D) Mahatma Gandhi

Q.11. Which of the following Natural Resources is In exhaustible?
(A) Natural Gas (B) Coal (C) Iron Ore (D) Solar Energy

Q.12. Lactometer measures the density of

(A) Water (B) Oil (C) Alcohol (D) Milk

Q.13. "B A H A I" Temple is located IN:

(A) Bengaluru (B) Chennai (C) Lucknow (D) Delhi

Q.14. Who is the first sportsperson to be conferred "Khel Ratna"?

(A) Sachin Tendulkar (B) Maru khan
(C) Vishwanathan Anand (D) Gagan Narang

Q.15. Which of these is a computer Operation System?
(A) Doors (B) Porches (C) Gates (D) Windows

Q.16. Who is your paternal grandfathers daughter – in – law?

(A) Sister (B) Daughter (C) Nieca (D) Mother

Q.17. How many minutes are there in a day?

(A) 1440 (B) 1480 (C) 1880 (D) 1240

Q.18. What is the capital of Maldives?

(A) Port Blair (B) Mali (C) Male (D) Malta

Q.19. Who wrote the song " Saare Jahan se Achchha - - - - ?

(A) Allama Iqbal (B) Mirza Ghalib
(C) Rabindernath Tagore (D) None of these

Q.20. What is the place of workship of Jews called?
(A) Synagogue (B) Fire Temple (C) Vihar (D) Church

Q.21. FIFA World Cup 2022 will be held in:

(A) Russia (B) Qatar (C) Kuwait (D) Oman

Q.22. Which of the following award was conferred on airhostess Neerja Bhanot?

(A) Ashok Chakra (B) Veer Chakra
(C) Param veer chakra (D) Maha veer chakra

Q.23. Which of the following two numbers together form the 'Binary Language" used in computers?

(A) 0 & 9 (B) 143 (C) 0 & 1 (D) 1 & 2

Q.24. "Playing it my way" is the auto biography of which cricketer?

(A) Kapil Dev (B) Sunil Gavaskar (C) Brain Lara (D) Sachin Tendulkar

Q.25. On which of the following date "Constitution Day" is celebrated in India?

(A) 26 November (B) 26 January (C) 06 December (D) 2nd October

ANSWER KEY TO SECTION-V - GENERAL KNOWLEDGE

Q.	A.	Q.	A.	Q.	A.	Q.	A.	Q.	A.
1	B	6	D	11	D	16	D	21	B
2	C	7	C	12	D	17	A	22	A
3	B	8	B	13	D	18	C	23	C
4	A	9	C	14	C	19	A	24	D
5	C	10	C	15	D	20	A	25	A