



TEST PAPER

CLASS-12 PASSED

Time Allowed : *Two Hours*

Maximum Marks : **400**

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/ discrepancy will render the Answer Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. This Test Booklet contains **100** items (questions). **Part I - Mathematics, Science** and **Part II - English, General Awareness**. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
5. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See directions in the Answer Sheet.
6. **Each** item carry **four (4)** marks.
7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the invigilator **only the Answer Sheet**. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. **Penalty for wrong answers :**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one (1)** mark assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
 - (iii) If a question is left blank i.e., no answer is given by the candidate, there will be **no penalty** for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

/;ku na%vups'kka dk fglnh : i klrj bl i qLrdk ds fi Nys i`B ij Nik gA

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PART - I

MATHEMATICS

1. If R be a relation from $A = \{1, 2, 3, 4\}$ to $B = \{1, 3, 5\}$ i.e., $(a, b) \in R \Leftrightarrow a < b$, then $R \circ R^{-1}$ is :
 - (a) $\{(1, 3), (1, 5), (2, 3), (2, 5), (3, 5), (4, 5)\}$
 - (b) $\{(3, 1), (5, 1), (3, 2), (5, 2), (5, 3), (5, 4)\}$
 - (c) $\{(3, 3), (3, 5), (5, 3), (5, 5)\}$
 - (d) $\{(3, 3), (3, 4), (4, 5)\}$

2. If the function $f : [1, \infty) \rightarrow [1, \infty)$ is defined by $f(x) = 2^{x(x-1)}$, then $f^{-1}(x)$ is :
 - (a) $\left(\frac{1}{2}\right)^{x(x-1)}$
 - (b) $\frac{1}{2}(1 + \sqrt{1 + 4 \log_2 x})$
 - (c) $\frac{1}{2}(1 - \sqrt{1 + 4 \log_2 x})$
 - (d) Not defined

3. The common roots of the equations $x^{12} - 1 = 0$, $x^4 + x^2 + 1 = 0$ are :
 - (a) $\pm\omega$
 - (b) $\pm\omega^2$
 - (c) $\pm\omega, \pm\omega^2$
 - (d) None of these

4. The sum of first n terms of the given series $1^2 + 2.2^2 + 3^2 + 2.4^2 + 5^2 + 2.6^2 + \dots$ is $\frac{n(n+1)^2}{2}$, when n is even. When n is odd, the sum will be?
 - (a) $\frac{n(n+1)^2}{2}$
 - (b) $\frac{1}{2}n^2(n+1)$
 - (c) $n(n+1)^2$
 - (d) None of these

5. Let α, β be the roots of $x^2 + (3-\lambda)x - \lambda = 0$. The value of λ for which $\alpha^2 + \beta^2$ is minimum, is :
 - (a) 0
 - (b) 1
 - (c) 2
 - (d) 3

6. The exponent of 3 in $100!$ is :
 - (a) 33
 - (b) 44
 - (c) 48
 - (d) 52

1. ; fn $R, d \mid Ecl/k A \mid SB \text{ e agb } t gk; A = \{1, 2, 3, 4\}$ $\mid SB = \{1, 3, 5\} \forall Fkkf \sim (a, b) \in R \Leftrightarrow a < b, \Gamma C$ $R \circ R^{-1}$ gS%
 - (a) $\{(1, 3), (1, 5), (2, 3), (2, 5), (3, 5), (4, 5)\}$
 - (b) $\{(3, 1), (5, 1), (3, 2), (5, 2), (5, 3), (5, 4)\}$
 - (c) $\{(3, 3), (3, 5), (5, 3), (5, 5)\}$
 - (d) $\{(3, 3), (3, 4), (4, 5)\}$

2. ; fn $Qyu f : [1, \infty) \rightarrow [1, \infty), f(x) = 2^{x(x-1)}$, }kjk i fj Hkkf"kr gS rks $f^{-1}(x)$ gS%
 - (a) $\left(\frac{1}{2}\right)^{x(x-1)}$
 - (b) $\frac{1}{2}(1 + \sqrt{1 + 4 \log_2 x})$
 - (c) $\frac{1}{2}(1 - \sqrt{1 + 4 \log_2 x})$
 - (d) vi fj Hkkf"kr

3. l ehdj .k $x^{12} - 1 = 0$ vkj $x^4 + x^2 + 1 = 0$ dk mHk; fu"B ey g&
 - (a) $\pm\omega$
 - (b) $\pm\omega^2$
 - (c) $\pm\omega, \pm\omega^2$
 - (d) bu ea l s dkkbZ ugha

4. Js kh $1^2 + 2.2^2 + 3^2 + 2.4^2 + 5^2 + 2.6^2 + \dots$ ds i Fke n inkadk ; kx Qy $\frac{n(n+1)^2}{2}$ gS t cfd n l e gS t c n fo"ke gks rks Js kh dk ; kx gksk %
 - (a) $\frac{n(n+1)^2}{2}$
 - (b) $\frac{1}{2}n^2(n+1)$
 - (c) $n(n+1)^2$
 - (d) bu ea l s dkkbZ ugha

5. ; fn α, β l ehdj .k $x^2 + (3-\lambda)x - \lambda = 0$ ds ey gk rks λ ds fd l eku ds fy; s $\alpha^2 + \beta^2$ dk eku U; ure gS%
 - (a) 0
 - (b) 1
 - (c) 2
 - (d) 3

6. 100! ea 3 dk ?kkrkad gS%
 - (a) 33
 - (b) 44
 - (c) 48
 - (d) 52

7. Five balls of different colours are to be placed in three boxes of different sizes. Each box can hold all five balls. In how many ways can we place the balls so that no box remains empty :

- (a) 50 (b) 100
(c) 150 (d) 200

8. Let $P(n)$ denote the statement that $(n^2 + n)$ is odd. It is seen that $P(n) \Rightarrow P(n+1)$, P_n is true for all :

- (a) $n > 1$ (b) n
(c) $n > 2$ (d) None of these

9. Adjoint of the matrix $N = \begin{bmatrix} -4 & -3 & -3 \\ 1 & 0 & 1 \\ 4 & 4 & 3 \end{bmatrix}$ is :

- (a) N (b) $2N$
(c) $-N$ (d) None of these

10. What is the value of $\begin{vmatrix} a+b & a+2b & a+3b \\ a+2b & a+3b & a+4b \\ a+4b & a+5b & a+6b \end{vmatrix}$?

- (a) $a^2 + b^2 + c^2 - 3abc$ (b) $3ab$
(c) $3a + 5b$ (d) 0

11. There are 3 bags which are known to contain 2 white and 3 black balls; 4 white and 1 black balls and 3 white and 7 black balls in each bag respectively. A ball is drawn at random from one of the bags and found to be a black ball. Then the probability that it was drawn from the bag containing the most black balls is :

- (a) $\frac{7}{15}$ (b) $\frac{5}{19}$
(c) $\frac{3}{4}$ (d) None of these

12. A die is tossed thrice. If getting a four is considered a success, then the mean and variance of the probability distribution of the number of successes are :

- (a) $\frac{1}{2}, \frac{1}{12}$ (b) $\frac{1}{6}, \frac{5}{12}$
(c) $\frac{5}{6}, \frac{1}{2}$ (d) None of these

7. $v_{yx} \& v_{xy}$ eki dh rhu I Unvd ea fHKU & fHKU ja dh 5 x n j [kuk gA i R; d I Unvd ea I Hkh i kp x nka dks j [kk tk I drk gA fdrus < a I s x nka dks ge I Unvd eaj [k I drsgafd dkbz I Unvd [kkyh u jg&

- (a) 50 (b) 100
(c) 150 (d) 200

8. ekuk $P(n)$ dFku “ $(n^2 + n)$ fo"ke gS dks0; Dr djrk gA ; g n [kk x; k fd $P(n) \Rightarrow P(n+1)$ rks n dsfdu I Hkh ekuka dsfy, $P(n)$ I R; gS

- (a) $n > 1$ (b) n
(c) $n > 2$ (d) buea I s dkbz ugha

9. $v_0; g N = \begin{bmatrix} -4 & -3 & -3 \\ 1 & 0 & 1 \\ 4 & 4 & 3 \end{bmatrix}$ dk I g [k.Mt g&

- (a) N (b) $2N$
(c) $-N$ (d) buea I s dkbz ugh

10. $\begin{vmatrix} a+b & a+2b & a+3b \\ a+2b & a+3b & a+4b \\ a+4b & a+5b & a+6b \end{vmatrix}$ dk eku D; k gS

- (a) $a^2 + b^2 + c^2 - 3abc$ (b) $3ab$
(c) $3a + 5b$ (d) 0

11. rhu fKSyagS ftuea I s i R; d ea Oe'k%2 I On vKj 3 dkyh] 4 I On vKj 1 dkyh rFkk 3 I On vKj 7 dkyh xna gA bu fKSyka ea , d ea I s , d x n ; nPN; k p q h t k r h g S v K j d k y h x n c k t r g k r h g S r c b l x n d s m l f K S y e a l s f t l e a l c l s v f / k d d k y h x n a g S g k u s d h c k f ; d r k g S

- (a) $\frac{7}{15}$ (b) $\frac{5}{19}$
(c) $\frac{3}{4}$ (d) buea I s dkbz ugh

12. , d i k l k 3 c k j O a d k t k r k g A 4 d k v k u k I Q y e k u k t k r k g S r k s c k f ; d r k f o r j . k d h I Q y r k v k a d h I d ; k v k a d k e k / ; v K j f o l j . k g S %

- (a) $\frac{1}{2}, \frac{1}{12}$ (b) $\frac{1}{6}, \frac{5}{12}$
(c) $\frac{5}{6}, \frac{1}{2}$ (d) buea I s dkbz ugha

13. If $A + B + C = 180^\circ$, then $\sum \tan \frac{A}{2} \tan \frac{B}{2}$ is equal to:
- (a) 0 (b) 1
(c) 2 (d) 3
14. A person standing on the bank of a river observes that the angle subtended by a tree on the opposite bank is 60° . When he retires 40 meter from the bank, he finds the angle to be 30° . The breadth of the river is :
- (a) 20 m (b) 40 m
(c) 30 m (d) 60 m
15. If a triangle PQR , $\sin P, \sin Q, \sin R$ are in A.P., then:
- (a) The altitudes are in A.P.
(b) The altitudes are in H.P.
(c) The medians are in G.P.
(d) The medians are in A.P.

16. The value of $2 \tan^{-1} \left[\sqrt{\frac{a-b}{a+b}} \tan \frac{\theta}{2} \right]$ is :

- (a) $\cos^{-1} \left(\frac{a \cos \theta + b}{a + b \cos \theta} \right)$
(b) $\cos^{-1} \left(\frac{a + b \cos \theta}{a \cos \theta + b} \right)$
(c) $\cos^{-1} \left(\frac{a \cos \theta}{a + b \cos \theta} \right)$
(d) $\cos^{-1} \frac{b \cos \theta}{b + a \cos \theta}$

17. Let P be the point $(1, 0)$ and Q a point of the locus $y^2 = 8x$. The locus of mid point of PQ is :
- (a) $x^2 + 4y + 2 = 0$ (b) $x^2 - 4y + 2 = 0$
(c) $y^2 - 4x + 2 = 0$ (d) $y^2 + 4x + 2 = 0$
18. Equation of the line which passes through the point $(-4, 3)$ and the portion of the line intercepted between the axes is divided internally in the ratio 5 : 3 by this point, is :
- (a) $9x + 20y + 96 = 0$ (b) $20x + 9y + 96 = 0$
(c) $9x - 20y + 96 = 0$ (d) None of these

13. ; fn $A + B + C = 180^\circ$, rc $\sum \tan \frac{A}{2} \tan \frac{B}{2}$ cjkj gS
- (a) 0 (b) 1
(c) 2 (d) 3
14. , d 0; fä tks unh dsfdkj [kMk gS] unh ds nh js fdkj ij fLFkr , d o{k dk mlU; u dsk 60° vutkr djrk gA tc og fdkj sl s40 ehVj i hNsgVrk gS rks dsk 30° gS tkrk gA unh dh plMbz gS%
- (a) 20 ehVj (b) 40 ehVj
(c) 30 ehVj (d) 60 ehVj
15. ; fn ΔPQR eS $\sin P, \sin Q, \sin R$ l ekUrj Jskh eAgk rks %
- (a) 'k'kZyEc l ekUrj Jskh eAgS
(b) 'k'kZyEc gjkRed Jskh eAgS
(c) ekf/; dk; a xqkkkjk Jskh eAgS
(d) ekf/; dk; a l ekUrj Jskh eAgS

16. $2 \tan^{-1} \left[\sqrt{\frac{a-b}{a+b}} \tan \frac{\theta}{2} \right]$ dk eku gS%

- (a) $\cos^{-1} \left(\frac{a \cos \theta + b}{a + b \cos \theta} \right)$
(b) $\cos^{-1} \left(\frac{a + b \cos \theta}{a \cos \theta + b} \right)$
(c) $\cos^{-1} \left(\frac{a \cos \theta}{a + b \cos \theta} \right)$
(d) $\cos^{-1} \frac{b \cos \theta}{b + a \cos \theta}$

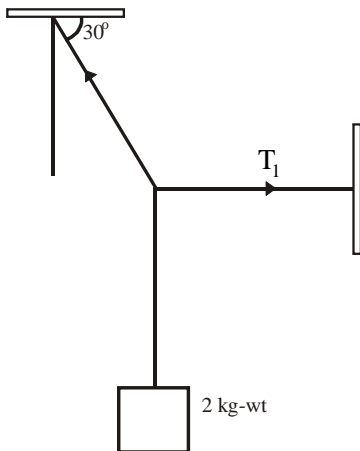
17. ekuk $P(1, 0)$ gS vj oØ $y^2 = 8x$ ds fclnq Fk i j , d fclnq Q gA PQ ds e/; fclnq dk fclnq Fk gS%
- (a) $x^2 + 4y + 2 = 0$ (b) $x^2 - 4y + 2 = 0$
(c) $y^2 - 4x + 2 = 0$ (d) $y^2 + 4x + 2 = 0$
18. ml j[kk dk l ehdj .k D;k gS tks $(-4, 3)$ l s xqj rh gS, oa bl fclnq }kjk v{kka ds chip dk Hkkx 5 : 3 ds vuq kr ea vUr% foHkkftr gkrk gS gS%
- (a) $9x + 20y + 96 = 0$ (b) $20x + 9y + 96 = 0$
(c) $9x - 20y + 96 = 0$ (d) bu ea l s dkbZ ugha

19. Area of the circle in which a chord of length $\sqrt{2}$ makes an angle $\frac{\pi}{2}$ at the centre is :
- (a) $\frac{\pi}{2}$ (b) 2π
 (c) π (d) $\frac{\pi}{4}$
20. The line $y = mx + c$ is a normal to the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, then c equal is :
- (a) $-(2am + bm^2)$ (b) $\frac{(a^2 + b^2)m}{\sqrt{a^2 + b^2m^2}}$
 (c) $-\frac{(a^2 - b^2)m}{\sqrt{a^2 + b^2m^2}}$ (d) $\frac{(a^2 - b^2)m}{\sqrt{a^2 + b^2}}$
21. The locus of the point of intersection of the lines $\sqrt{3}x - y - 4\sqrt{3}k = 0$ and $\sqrt{3}kx + ky - 4\sqrt{3} = 0$ for different value of k is :
- (a) Circle (b) Parabola
 (c) Hyperbola (d) Ellipse
22. If a, b, c are non-coplanar vectors and λ is a real number, then the vectors $\mathbf{a} + 2\mathbf{b} + 3\mathbf{c}, \lambda\mathbf{b} + 4\mathbf{c}$ and $(2\lambda - 1)\mathbf{c}$ are non-coplanar for :
- (a) No value of λ
 (b) All except one value of λ
 (c) All except two values of λ
 (d) All values of λ
23. The equations $|x| = p, |y| = p, |z| = p$ in xyz space represent :
- (a) Cube (b) Rhombus
 (c) Sphere of radius p (d) Point (p, p, p)
24. The value of f at $x = 0$ so that the function $f(x) = \frac{2^x - 2^{-x}}{x}, x \neq 0$, is continuous at $x = 0$, is :
- (a) 0 (b) $\log 2$
 (c) 4 (d) $\log 4$
25. Area bounded by curves $y = x^2$ and $y = 2 - x^2$ is :
- (a) $8/3$ (b) $3/8$
 (c) $3/2$ (d) None of these

19. ml or dk $\sqrt{2}$ yEckbz dh thok dthæ ij $\frac{\pi}{2}$ dksk vUrfjr djrh gS%
- (a) $\frac{\pi}{2}$ (b) 2π
 (c) π (d) $\frac{\pi}{4}$
20. ; fn j[$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ dk , d vflkyEc gS rks c jkjcj gS%
- (a) $-(2am + bm^2)$ (b) $\frac{(a^2 + b^2)m}{\sqrt{a^2 + b^2m^2}}$
 (c) $-\frac{(a^2 - b^2)m}{\sqrt{a^2 + b^2m^2}}$ (d) $\frac{(a^2 - b^2)m}{\sqrt{a^2 + b^2}}$
21. k dsfoflkÉ ekulædsfy, j[$\sqrt{3}x - y - 4\sqrt{3}k = 0$ v[$\sqrt{3}kx + ky - 4\sqrt{3} = 0$ ds çfrPNn fclnq/kæ dk fclnq Fk gS%
- (a) or (b) ijoy;
 (c) vfrijoy; (d) nh?kbr
22. ; fn a, b, c vl eryh; I fn'k gâv[λ , d okLrfod I [; k gS rks fdl eku ds fy, I fn'k $\mathbf{a} + 2\mathbf{b} + 3\mathbf{c}, \lambda\mathbf{b} + 4\mathbf{c}$ v[$(2\lambda - 1)\mathbf{c}$ vl eryh; gâ
- (a) λ dk dkbz eku ugha gS
 (b) λ ds, d eku ds vfrfjDr I Hkh dsfy,
 (c) λ ds nks eku ds vfrfjDr I Hkh dsfy,
 (d) λ ds I Hkh eku dsfy,
23. xyz -vfrfj {k ea I ehdj.k $|x| = p, |y| = p, |z| = p$ çnf"kr djrk gS%
- (a) ?ku (b) I eprh[
 (c) $p = T$; k dk xksyk (d) fclnq (p, p, p)
24. $x = 0$ ij f dk eku] bl idkj fd $x = 0$ ij Qyu $f(x) = \frac{2^x - 2^{-x}}{x}, x \neq 0$, I rr gS%
- (a) 0 (b) $\log 2$
 (c) 4 (d) $\log 4$
25. oØ $y = x^2$ rFkk $y = 2 - x^2$ I sf?kjs {k= dk {k=Qy gS%
- (a) $8/3$ (b) $3/8$
 (c) $3/2$ (d) buea I s dkbz ugha

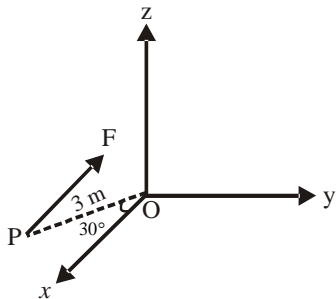
SCIENCE

26. A body of weight 2 kg is suspended as shown in figure. The tension T_1 in the horizontal string (in kg-wt) is



- (a) $2\sqrt{3}$ (b) $\sqrt{3}/2$
- (c) $\sqrt{3}$ (d) 2

27. A force $F = 2.0$ N acts on a particle P in the x-z plane. The force F is parallel to x-axis. The particle P (as shown in the figure) is at a distance 3m and the line joining P with the origin makes an angle 30° with the x-axis. The magnitude of torque on P w.r.t. origin O (in N-m) is

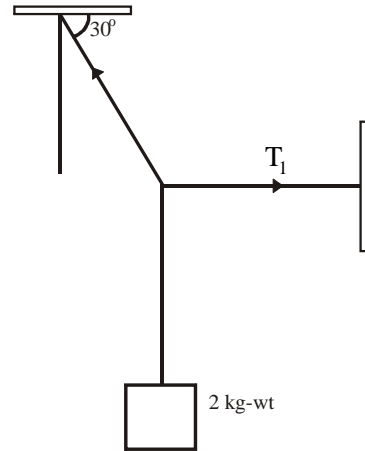


- (a) 2 (b) 3
- (c) 4 (d) 5

28. Two rods of the same length and diameter having thermal conductivities K_1 and K_2 are joined in parallel. The equivalent thermal conductivity of the combination is

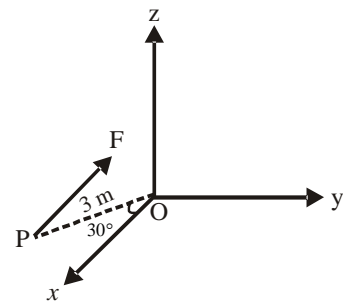
- (a) $\frac{K_1 K_2}{K_1 + K_2}$ (b) $K_1 + K_2$
- (c) $\frac{K_1 + K_2}{2}$ (d) $\sqrt{K_1 K_2}$

26. , d fi UM ftI dk Hkkj 2 Kg gSfp=kud kj yVdk; k x; k gA {krt jLI h earuko T_1 (Kg-wt) eagkskA



- (a) $2\sqrt{3}$ (b) $\sqrt{3}/2$
- (c) $\sqrt{3}$ (d) 2

27. x, z ry eafLFkr fdl h d.k P ij , d cy $F = 2$ N dk; l djrk gA cy F, x v{k ds l ekUrj gA d.k P, 3 eh0 dh njh ij gS vkSj d.k P dks feykus okyh jS{k x v{k dh mRi fYk ds l kFk 30° dk dksk cukrh gS rks mRi fYk O ds l ki S{k P ij cy dk vk?kwZ (N-m) ea gksk&

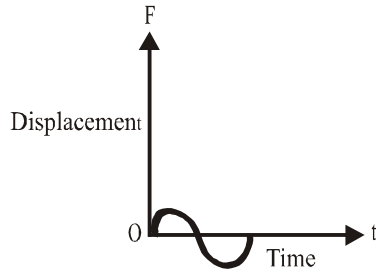


- (a) 2 (b) 3
- (c) 4 (d) 5

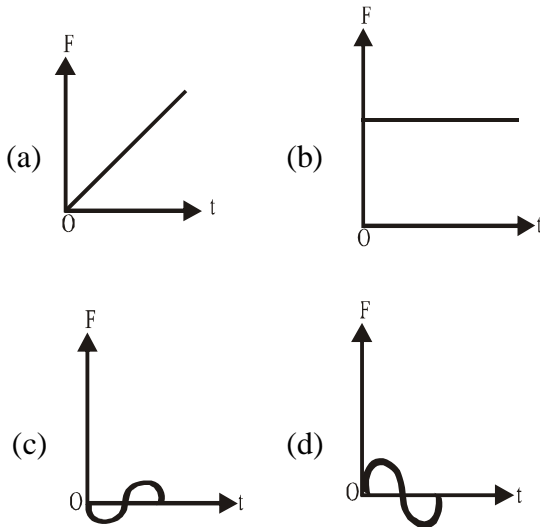
28. I eku yEckbZ vkSj 0; kl okyh nks NMla dh Å"ek pkydrk K_1 rFkk K_2 gS tks l ekUrj Øe ea tkMh x; h gA rks bl l a kstu dh rF; Å"eh; pkydrk gkskA

- (a) $\frac{K_1 K_2}{K_1 + K_2}$ (b) $K_1 + K_2$
- (c) $\frac{K_1 + K_2}{2}$ (d) $\sqrt{K_1 K_2}$

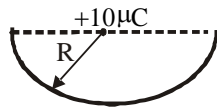
29. The displacement-time graph of a particle executing SHM is as shown in the figure.



The corresponding force-time graph of the particle is

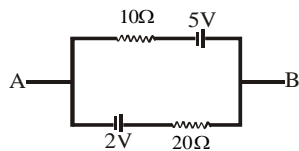


30. A charge $10\mu\text{C}$ is placed at the centre of a hemisphere of radius $R = 10\text{ cm}$ as shown. The electric flux through the hemisphere (in MKS units) is



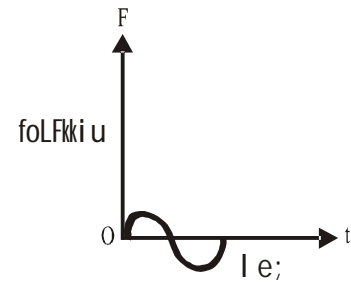
- (a) 20×10^5
- (b) 10×10^5
- (c) 6×10^5
- (d) 2×10^5

31. The current in the given circuit is

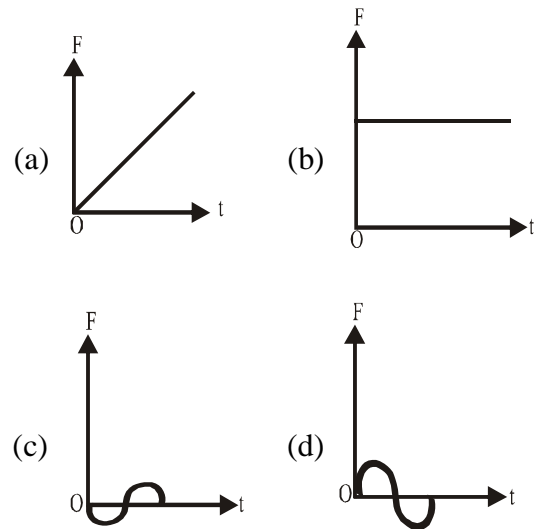


- (a) 0.3 A
- (b) 0.4 A
- (c) 0.1 A
- (d) 0.2 A

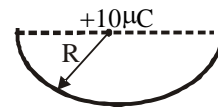
29. The displacement-time graph of a particle executing SHM is as shown in the figure.



The corresponding force-time graph of the particle is

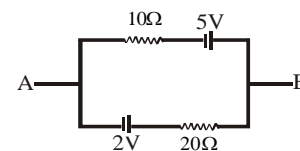


30. A charge $10\mu\text{C}$ is placed at the centre of a hemisphere of radius $R = 10\text{ cm}$ as shown. The electric flux through the hemisphere (in MKS units) is







- (a) 20×10^5
- (b) 10×10^5
- (c) 6×10^5
- (d) 2×10^5

31. The current in the given circuit is

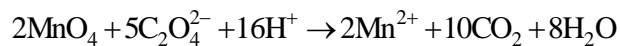


- (a) 0.3 A
- (b) 0.4 A
- (c) 0.1 A
- (d) 0.2 A

32. The forward biased diode connection is

- (a) 
- (b) 
- (c) 
- (d) 

33. MnO_4^- reacts with oxalic acid according to the equation:



20 ml of 0.1 M MnO_4^- is equivalent to

- (a) 120 ml of 0.25 M oxalic acid
- (b) 150 ml of 0.1 M oxalic acid
- (c) 50 ml of 0.1 M oxalic acid
- (d) 50 ml of 0.2 M oxalic acid

34. How many moles of acidic potassium permagnate reacts with one mole of $KHC_2O_4 \cdot HCOONa \cdot 2H_2O$?

- (a) $\frac{2}{5}$
- (b) $\frac{4}{5}$
- (c) $\frac{5}{4}$
- (d) $\frac{5}{2}$

35. A sample of potato starch was grinded in a ball mill to give a starch like molecule of lower molecular weight. The product analysed 0.086% Phosphorus. If each molecule is assumed to contain one atom of phosphorus. The molecular weight of the material is

- (a) 3.6×10^6
- (b) 4.9×10^4
- (c) 7.2×10^3
- (d) 3.6×10^4


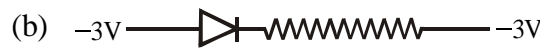


36. In the borax bead test of Co^{2+} the blue colour of bead is due to the formation of

- (a) B_2O_3
- (b) Co_3B_2
- (c) $Co(BO_2)_2$
- (d) Co_3O_4

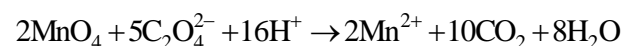
37. Dry powder fire extinguisher contains

- (a) Sand
- (b) Sand and Na_2CO_3
- (c) Sand and Baking soda
- (d) Sand and K_2CO_3

32. buea dkkv vxz Mk; kM l a kst u vfhkur gA

- (a) 
- (b) 
- (c) 
- (d) 

33. MnO_4^- dk vkD tfyd vEy ds l kfk fuEufyf [kr l ehdj. k ds vuq i vfhkfo; k djrk gA



0.1 M MnO_4^- dh 20 ml ek=k fd l dscjkj gA

- (a) 0.25 M oxalic vEy dh 120 ml
- (b) 0.1 M oxalic vEy dh 150 ml
- (c) 0.1 M oxalic vEy dh 50 ml
- (d) 0.2 M oxalic vEy dh 50 ml

34. vEyh; i kV/S' k; e i jekus/ ds fdrus eky $KHC_2O_4 \cdot HCOONa \cdot 2H_2O$ ds, d eky l svfhkfo; k djxk\

- (a) $\frac{2}{5}$
- (b) $\frac{4}{5}$
- (c) $\frac{5}{4}$
- (d) $\frac{5}{2}$

35. vkYw ds LVkpz ds ueus dks, d cky fey ea i hl k tkrk gS r kfd fuEu vk. kfod Hkkj okys LVkpz tS k, d v. kq i klr gks l ds bl mRi kn dk 0.086% QkLQkj l ds #i ea fo' ySk. k fd; k x; kA; fn i R; d v. kq ea, d QkLQkj l v. kq mi l fLfr gks rc i nkFkZ dk v. kq Hkkj D; k gS

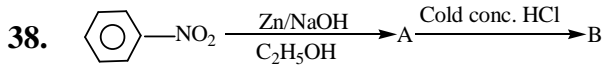
- (a) 3.6×10^6
- (b) 4.9×10^4
- (c) 7.2×10^3
- (d) 3.6×10^4

36. Co^{2+} ds ckjDI chM ij h{k. k ea chM dk uhyk jax fd l ds fuekZk dk i fj. kke gS

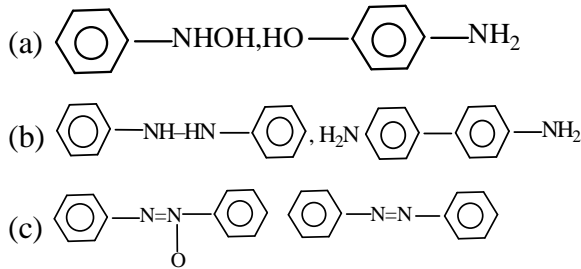
- (a) B_2O_3
- (b) Co_3B_2
- (c) $Co(BO_2)_2$
- (d) Co_3O_4

37. 'kqd i kmMj; qR vfxu'kked; æ ea gkRk gS

- (a) ckyw
- (b) ckyw rFk Na_2CO_3
- (c) ckyw rFk cfdax l kMk
- (d) ckyw rFk K_2CO_3



A and B are

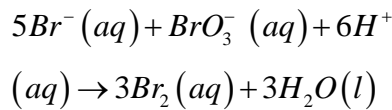


(d) none is correct

39. Equimolar solutions in the same solvent have :

- (a) same boiling point but different freezing points
- (b) same freezing point but different boiling points
- (c) same freezing and boiling points
- (d) different freezing and boiling points

40. Which of the following expressions is correct for the rate of reaction given below ?



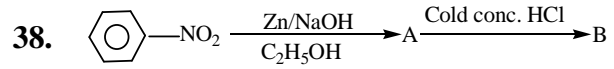
- (a) $\frac{\Delta[Br^-]}{\Delta t} = 5 \frac{\Delta[H^+]}{\Delta t}$
- (b) $\frac{\Delta[Br^-]}{\Delta t} = \frac{6}{5} \frac{\Delta[H^+]}{\Delta t}$
- (c) $\frac{\Delta[Br^-]}{\Delta t} = \frac{5}{6} \frac{\Delta[H^+]}{\Delta t}$
- (d) $\frac{\Delta[Br^-]}{\Delta t} = 6 \frac{\Delta[H^+]}{\Delta t}$

41. Match List I with List II and select the correct answer using codes given below in the lists:

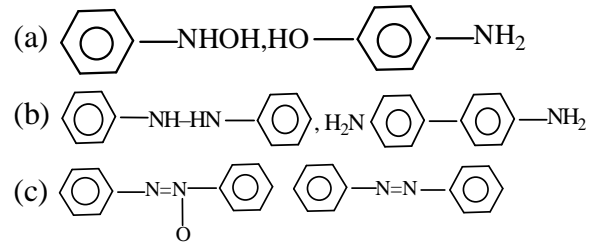
List I	List II
I. Cyanide process	A. Ultrapure Ge
II. Floatation process	B. Pine oil
III. Electrolytic reduction	C. Extraction of Al
IV. Zone refining	D. Extraction of Au

Codes :

- (a) I-C, II-A, III-D, IV-B
- (b) I-D, II-B, III-C, IV-A
- (c) I-C, II-B, III-D, IV-A
- (d) I-D, II-A, III-C, IV-B



A r Fk B gA

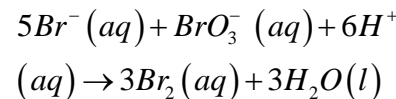


(d) mijkDr dkbZ Hkh l gh ugha

39. , d gh foyk; d ea l eekyj foy; uk d k %

- (a) , d l eku DoFkukad i jUrqfHkUu fgekad gkrs gA
- (b) , d l eku fgekad i jUrqfHkUu DoFkukad gkrs gA
- (c) , d l eku fgekad rFk DoFkukad gkrs gA
- (d) fHkUu&fHkUu fgekad rFk DoFkukad gkrs gA

40. uhps mYyS[kr j l k; fud vfhkFØ; k dh nj dk vkdyu djus ds l æk ea fuEu ea l s dk& l k vfhkdfku l R; gS



- (a) $\frac{\Delta[Br^-]}{\Delta t} = 5 \frac{\Delta[H^+]}{\Delta t}$
- (b) $\frac{\Delta[Br^-]}{\Delta t} = \frac{6}{5} \frac{\Delta[H^+]}{\Delta t}$
- (c) $\frac{\Delta[Br^-]}{\Delta t} = \frac{5}{6} \frac{\Delta[H^+]}{\Delta t}$
- (d) $\frac{\Delta[Br^-]}{\Delta t} = 6 \frac{\Delta[H^+]}{\Delta t}$

41. l ph&I dks l ph&II l s l efsyr dja rFk uhps fn, x, dWka dh enn l s l gh mRrj dk p; u dj&

l ph&I	l ph&II
I. l k; ukbM i fØ; k	A. vfr'kØ teſu; e
II. mRlykou fof/k	B. phM+dk ry
III. fo r vi p; u	C. , Y; fuſe; e dk fu"d"lk k
IV. tk& fj Qkbfu&	D. l k&s dk fu"d"lk k

dV %

- (a) I-C, II-A, III-D, IV-B
- (b) I-D, II-B, III-C, IV-A
- (c) I-C, II-B, III-D, IV-A
- (d) I-D, II-A, III-C, IV-B

42. Match the items of column I and column II.

Column-I

Column-II

- (i) S_{NI} reaction (a) vic-dibromides
- (ii) Chemicals used in fire extinguisher (b) gem-dihalides
- (iii) Bromination of alkenes (c) Racemisation
- (iv) Alkylidene halides (d) Saytzeff Rule
- (v) Elimination of HX from alkylhalide (e) Chlorobromocarbons

Codes :

- (a) (i-c), (ii-e), (iii-a), (iv-b), (v-d)
- (b) (i-b), (ii-d), (iii-a), (iv-c), (v-e)
- (c) (i-b), (ii-c), (iii-d), (iv-a), (v-e)
- (d) (i-a), (ii-e), (iii-d), (iv-b), (v-c)

43. Interferon is a

- (a) protein secreted by virus-infected cells
- (b) substance secreted by bacteria-infected cells
- (c) protein secreted by fungus-infected cells
- (d) substance that serves for cementing cells together

44. Genetic information is carried by long chain macromolecules made up of

- (a) amino acids (b) nucleotides
- (c) chromosomes (d) enzymes

45. Concave surface of mammalian RBCs is helpful in:

- (a) formation of more haemoglobin
- (b) increasing surface area of RBCs
- (c) reducing surface tension of plasma
- (d) providing more space for haemoglobin

46. Pathogens reaching into alimentary canal with food are destroyed by :

- (a) mastication (b) digestion
- (c) bile (d) HCl

47. Wuchereria bancrofti is transmitted by

- (a) Sandfly
- (b) Tse-tse fly
- (c) Anopheles mosquito
- (d) Culex mosquito

42. dkye I | s dkye II dks | epyr dhft, %

Column-I

Column-II

- (i) S_{NI} vfhkfo; k (a) Vic-dibromides
- (ii) vfxu'kked ; e ea (b) gem-dihalides
- (iii) , Ydhuls dk ckekuhdj .k (c) Racemisation
- (iv) , ydkbyhMhu gSykbMf (d) Sytzeff rule
- (v) , fYdy gsykbM | s (e) Dykj ckekdckdl

dV %

- (a) (i-c), (ii-e), (iii-a), (iv-b), (v-d)
- (b) (i-b), (ii-d), (iii-a), (iv-c), (v-e)
- (c) (i-b), (ii-c), (iii-d), (iv-a), (v-e)
- (d) (i-a), (ii-e), (iii-d), (iv-b), (v-c)

43. b\jQjku gS , d &

- (a) thok.kq | efer dks' kdkvka }kjk mRI ftz i k\hu
- (b) dhvk.kq | efer dks' kdkvka }kjk mRI ftz i nkfkz
- (c) dod | efer dks' kdkvka }kjk mRI ftz i k\hu
- (d) dks' kdkvka dks ijLi j tkMtus okyk i nkfkA

44. vkuofk' kd xqkka ds | pj .k ogn~ v.kq/ka dh yEch dMh }kjk gkrc gS tks cus gkrs gS %

- (a) , ehuls vEy | s (b) U; fDy; k\kbMf | s
- (c) xqkl # | s (d) fd.od | s

45. Lruik; h thokadh yky j DRk dks' kdkvka dh voryh; | rg ennxkj gkrc h gS %

- (a) T; knk ghekykfcu ds fuekz k eA
- (b) yky jDr dks' kdkvka dh i "B {ks-Qy dksc<huseA
- (c) lyktek f>Yyh ds i "B ruko dks ?kVkus eA
- (d) ghekykfcu dsfy, T; knk LFku mi yC/k dj kuseA

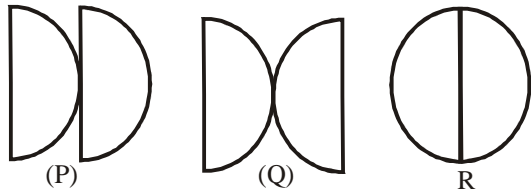
46. Hkktu ds | kfk vkgkj uyh ea i gpus okys j ksk.kq u"V gks tkrs gS %

- (a) pckus ij (b) ikpu ds i 'pkr
- (c) ckby | ko | s (d) HCl vEy }kjk

47. opjij; k cdlOkpVh dk | e.k Qsyrc gS %

- (a) jr dhv }kjk
- (b) Tse - tse eD[kh }kjk
- (c) , ukQyht ePNj }kjk
- (d) D; myDI ePNj }kjkA

48. Given figures show the arrangements of two lenses. The radii of curvature of all the curved surfaces are same. The ratio of the equivalent focal length of combinations P, Q and R is



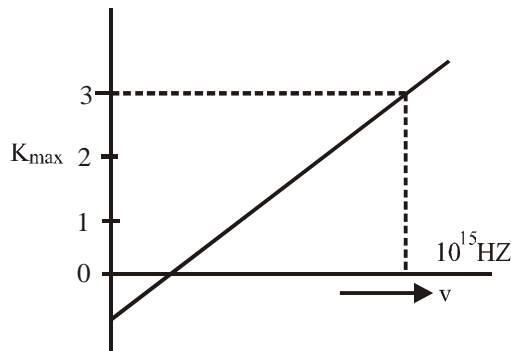
- (a) 1 : 1 : 1
- (b) 1 : 1 : -1
- (c) 2 : 1 : 1
- (d) 2 : 1 : 2

49. The critical angle of a certain medium is $\sin^{-1}\left(\frac{3}{5}\right)$.

The polarising angle of the medium is

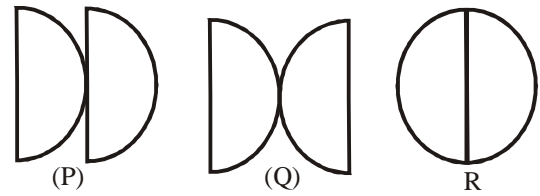
- (a) $\tan^{-1}\left(\frac{4}{3}\right)$
- (b) $\tan^{-1}\left(\frac{3}{4}\right)$
- (c) $\tan^{-1}\left(\frac{5}{3}\right)$
- (d) $\sin^{-1}\left(\frac{4}{5}\right)$

50. Figure represents a graph of kinetic energy of most energetic photoelectrons, K_{max} (in eV) and frequency (ν) for a metal used as cathode in photoelectric experiment. The threshold frequency of light for the photoelectric emission from the metal is



- (a) 1×10^{14} Hz
- (b) 1.5×10^{14} Hz
- (c) 2.1×10^{14} Hz
- (d) 2.7×10^{14} Hz

48. fp= ea fn [kk; s x; s nks ydl ka ds oØ i "Bka dh f=T; k; a l eku g P, Q, , oa R l a kst u dh rY; QkdI nfij; ka dk vuq kr gksxkA



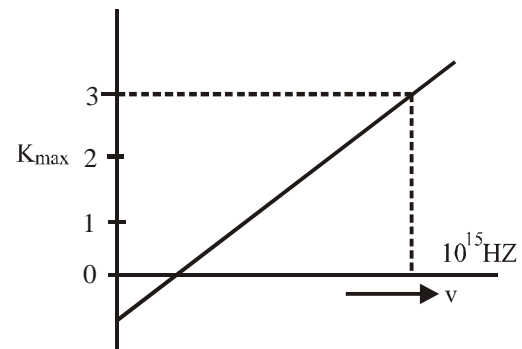
- (a) 1 : 1 : 1
- (b) 1 : 1 : -1
- (c) 2 : 1 : 1
- (d) 2 : 1 : 2

49. fdI h ek/; e dsfy; sØkflrd dksk dk eku

$\sin^{-1}\left(\frac{3}{5}\right)$ gA bl h ek/; e ds /k.k dksk dk eku gksxkA

- (a) $\tan^{-1}\left(\frac{4}{3}\right)$
- (b) $\tan^{-1}\left(\frac{3}{4}\right)$
- (c) $\tan^{-1}\left(\frac{5}{3}\right)$
- (d) $\sin^{-1}\left(\frac{4}{5}\right)$

50. xkQ , d fp= , d /krqdsfy, vR; f/kd 'kDr' kYh Qk/s byDVku dh xfrt Åtkl inf'kr djrk gS tGk KE max (ev) eaRfk vkofr (v) g\$ dks izdk'k oSj r i Hkko ds iz; kx ea d f k M ds #i ea iz; kx fd; k x; k gS r k smI /krqI smRI f t r Qk/s byDVku ds fy, izdk'k dh ngYh vkofr gksx %



- (a) 1×10^{14} Hz
- (b) 1.5×10^{14} Hz
- (c) 2.1×10^{14} Hz
- (d) 2.7×10^{14} Hz

PART-II**ENGLISH****Spotting Error**

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

51. Mr. Verma was however , sure (a) / that the idea would never work (b) / in practice (c) / No error (d)
52. He was courted arrest (a) / in order to protest against corruption (b) / among the government servants . (c) / No error (d)
53. The boy's parents pleaded (a) / with the principal that (b) / they were too poor to pay his tuition fee. (c) / No error (d)
54. Such books (a) / which you read (b) / are not worth reading. (c) / No error (d)
55. Employees are expected to (a) / adhere the rules (b) laid down by the management . (c) / No error (d)

Fill in the Blanks

Directions : Each of the following sentences in this section has a blank space and four words or group of words given after the sentence. Select whichever word or group of words you consider most appropriate for the blank space and indicate your response on the Answer Sheet accordingly.

56. Our team is hopeful _____ winning the match .
 (a) for (b) of (c) to (d) over
57. Mrs. Sharma and her younger sister are the _____ of Jawahar Lal Nehru University.
 (a) alumni (b) alumna (c) alumnae (d) alumnus
58. India spends a huge amount on the import of _____ Oil.
 (a) edible (b) eatable (c) eating (d) feeding
59. Here is a document that _____ your signature.
 (a) brings (b) provides (c) bears (d) supports

Synonyms

Direction: Each item in this section consists of a word in capital letters followed by four words as (a), (b), (c) and (d). Select the word which is most nearly the same in meaning as the original word and mark the correct response as (a), (b), (c) or (d) as the case may be, in your Answer Sheet.

60. ACCLIMATIZE
 (a) Announce (b) Accustom (c) Approve (d) Make tall claims
61. CHAUVINISM
 (a) Blind patriotism (b) Political trickery (c) Buffoonery (d) Defeatism
62. FEALTY
 (a) Feeling (b) Truth (c) Faculty (d) Loyalty
63. HALIDOM
 (a) Sanctity (b) Holiday (c) Present (d) Hell

Antonyms

Direction : Each item in this section consists of a word in capital letters followed by four words or phrases as (a), (b), (c) and (d). Select the word or phrase which is nearly opposite to the meaning of the original word and mark the correct response as (a), (b), (c) or (d) as the case may be, in your Answer Sheet.

64. RESTIVE
 (a) Restless (b) Relaxed (c) Deceitful (d) Grasping
65. JADED
 (a) Rejected (b) Zestful (c) Wicked (d) Frank
66. FATUOUS
 (a) Predestined (b) Impatient (c) Purposeful (d) Silly
67. RELEGATE
 (a) Repulse (b) Welcome (c) Substitute (d) Regale

Ordering of words in a sentence

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 re-arrange the jumbled parts of the sentence and select the correct sequence.

68. The statement
 P : therefore you must listen carefully
 Q : What the speaker has said
 R : in order to understand
 S : will be made just once
 The correct sequence should be :
 (a) S P R Q (b) S R Q P (c) R S P Q (d) S P Q R
69. The clerk
 P : on the desk
 Q : left the money
 R : in the safe
 S : which he should have locked up
 The correct sequence should be :
 (a) S R Q P (b) Q R S P (c) P Q R S (d) Q P S R
70. P : We have no authentic record
 Q : of Mother India
 R : of the early life and adventures of these two strange children
 S : save what they have given us in their autobiographies
 The correct sequence should be :
 (a) P R S Q (b) P R Q S (c) Q S R P (d) R P S Q
71. P : the endurance of the Indian people
 Q : lies in his attempt to release the energies
 R : contained in
 S : the revolutionary significance of Gandhi Ji
 The correct sequence should be :
 (a) P Q R S (b) S Q R P (c) P R Q S (d) S R P Q

READING COMPREHENSION

Directions : *In this section, is one short passage. After the passage, you will find few questions each based on what is stated or implied in the passage. First read the passage and then answer the questions following the passage.*

Passage

Scientists tell us that without the presence of the cohesive force among the atoms that comprise this globe of ours, it would crumble to pieces and we would cease to exist and even as there is cohesive force in blind matters, so must there be in all things animate. The name for that cohesive force among animate beings is love. We have to learn to use that force among all that live, and in the use of it consists our knowledge of God. Where there is love there is life; hatred leads to destruction. Life persists amidst destruction. Only under that law would a well-ordered society be intelligible and life worth living. All the teachers that have ever lived have preached this law with more or less the same vigour. If love was not law of life, life would not have persisted in the midst of death. Life is a perpetual triumph over the grave. If there is a fundamental distinction between man and beast, it is the former's progressive recognition of the law and its application in practice to his personal life. All the saints of the world, ancient and modern approve of that supreme law of our being. That the brute in us seems so often to gain an easy triumph is true enough. But that does not disprove the law. It shows the difficulty of practicing it.

- 72.** Cohesive force means
- (a) A force that repels one particle from the other
 - (b) A force which maintains balance between things
 - (c) A force which binds different particles or atoms of a thing together
 - (d) A force which attracts things from the atmosphere to the earth.
- 73.** Human beings are bound by
- (a) Self-interest
 - (b) Instinct of security
 - (c) Fear of God
 - (d) Love
- 74.** Our knowledge of God consists in
- (a) Understanding his omnipresence
 - (b) Learning to love all living things
 - (c) Learning that sinful acts lead to destruction
 - (d) Believing that God help the poor and the down trodden
- 75.** The supreme law of our being is
- (a) Survival of the fittest
 - (b) Love
 - (c) Survival of the best
 - (d) The inevitability of death.

80. Which of the following statements regarding Raja Krishnadeva Rai is not true?
- (a) He was a great scholar of Telugu and Sanskrit
 (b) Foreign Travellers Paes and Nunej came in his court
 (c) Barbosa praised him for the prevalence of famous/popular cult of great justice and unbiased judgement
 (d) He composed his best literary work called 'Amuktamalyad' in sanskrit
81. Which one among the following was not a feature of subsidiary alliance of Voclessly?
- (a) The Britishers would be responsible for the security of the treaty bound state against any external threat
 (b) The treaty bound state had to tackle on its own against all internal threats without any support from British administration
 (c) The treaty bound state had to provide resources to meet out the military requirements of the British armed regiments deployed in their region
 (d) The treaty bound states were not allowed to enter into any agreement with any other king without the permission of the British administration
82. Which one of the following was not a feature of Railways in Colonial India?
- (a) The main objective behind establishment of Railways in India was to serve/fulfill the interests of British empire
 (b) British capital investment was invited on a promise of 5% guaranteed interest which would be payable from the Indian revenue (Treasury) if needed
 (c) the construction work destabilized the ecosystem.
 (d) The construction of Railways was planned in such a way that it could connect the sea ports with internal markets but it could not establish a link between internal markets and cities.
80. jktk d".kno jk; ds l Ecu/k ea fuEufyf [kr ea l s dks&l k dFku l gha ugha gS
- (a) os ryqW vls l ldr ds , d egku-fo}ku FkA
 (b) fons kh ; k=h ik; l vls uqut mudsnjckj ea vk; s FkA
 (c) ckjckl k usml dh U; k; 0; oLFkk , oafu"i {krk dh iZka k dh gA
 (d) mlugkus viuh l oJ'SB dfr ^vep'rekY; n* dh jpuk l ldr ea dhA
81. fuEufyf [kr ea l s D; k] ykMz osyst yh dh l gk; d l fu/k dh , d fo'kkrk ugha Fkh\
- (a) fdl h ckjgh [krjs l s l fu/kc) jkT; dh l g {kk dsfy, fcfV'k ftEenkj FkA
 (b) l fu/kc) jkT; dks fcfV'k 'kkl u ds l g; kx ds fcuk l Hkh vkrfjd [krjka l s vdsys fui Vuk gkrk FkA
 (c) l fu/kc) jkT; dks ml ds {ks= ea lFkr fcfV'k l 0; ny dh vko' ; drkva dsfy, l a k/ku mi yCk djokus gkrk FkA
 (d) fcuk fcfV'k 'kkl u dh vufr ds l fu/kc) jkT; fdl h nW js jktk l s dkbz l e>kkrk ugha dj l drk FkA
82. fuEufyf [kr ea l s dks&l h , d fo'kkrk mi fuos kh; Hkkjr ea jsy dh ugha Fkh\
- (a) Hkkjr ea jsy dh LFkki uk dk eq; mnas; fcfV'k l kekT; ds fgrka dh l ok djuk FkA
 (b) 5 ifr'kr ds xkjf.Vr C; kt ij fcfV'k ipte fuosk dks vkefu=r fd; k x; kj tks t: jh gkus ij Hkkjr h; jktLo l sn; gksckA
 (c) fueZk dk; Z us i kfj lFkr dh dks vl keku; dj fn; kA
 (d) jsyos ds fueZk dks bl idkj fu; kstr fd; k x; k fd og vkrfjd cktkjka dks l emh clnjxkgka l stkm; fdlurqbl l svkrfjd cktkjka , oa uxjka ds chp l Ei dz LFkfi r ugha gq/kA

83. Consider the following provisions inducted in the directive principles of state policy, of the Indian Constitution.

1. Ensuring uniform civil code for all Indian Citizens.
2. Formation of Gram Panchayats.
3. Promotion of cottage industries in rural area.
4. Providing appropriate leave and cultural opportunity to all employees.

Which of the above is/are Gandhian thoughts reflected in directive principles?

Codes :

- (a) 1, 2 and 4 (b) 2 and 3
(c) 1, 3 and 4 (d) All these

84. As per Indian Constitution it is the duty of the president to place, which of the following on the floor of the house?

1. The recommendations of Union finance Commission
2. The report of Public Account Committee.
3. The report of controller and auditor general of India.
4. The report of National Commission on Schedule Caste.

Choose the correct answer using the codes given below :

- (a) Only 1 (b) 2 and 4
(c) 1, 3 and 4 (d) All these

85. On which issue/issues of conflict between Lok Sabha and State Council, the joint session of parliament is called?

1. To pass an Ordinary Bill.
2. To pass a Finance Bill.
3. To pass a constitution Amendment Bill.

Choose the correct answer with the help of the codes given below :

- (a) Only 1 (b) 2 and 3
(c) 1 and 3 (d) All these

86. The distribution of power between central and states in the Indian Constitution is based on the provisions of which of the followings?

- (a) Marle-Minto Reform 1909
(b) Montague-Chelmsford Act-1919
(c) Government of India Act-1935
(d) Indian Independence Act-1947

83. Hkkjrh; I fno/kku ea ifr"Bkfir jkT; dh uhfr ds funskd rRoka ds vUr xr fuEufyf[kr i ko/kkuka ij fopkj dhft, A

- 1- Hkkjrh; ukxfjdkadsfy, I eku ukxfjd 1/1 foy1/2 I fgrk I fuf' pr djuka
- 2- xte ipk; rka dk xBuA
- 3- xteh.k {ks-kaeadh/hj m | kskadks i kBI kfgr djuka
- 4- I Hkh depkfj; ka ds fy, ; Fkkfpr vodk'k rFkk I kadfrd vol j I jf{kr djuka

mijkDr ea I s dks & I s xk/khoknh fl) kUr g1 tks jkT; dh uhfr ds funskd rRoka ea i frfcfEcr gksrgs

- (a) 1] 2 vks 4 (b) 2 vks 3
(c) 1] 3 vks 4 (d) buea I Hkh

84. Hkkjrh; I fno/kku ds vuq kj] Hkkjr ds jk"V1 fr dk ; g dU0; gsf d osfuEufyf[kr ea l sfdl dks@fdudks I a n ds iVy ij j [kok, \

- 1- I ak foUk vk; kx dh fl Qkfj' kka dks
- 2- ykd ys[kk I fefr ds ifronu dks
- 3- fu; U=d&egky[kk ij h[kd ds ifronu dks
- 4- jk"Vh; vuq fpr tkr vk; kx ds ifronu dks fuEufyf[kr dW/ka ds vk/kkj ij I gh mRrj pfu,

- (a) d0y 1 (b) 2 vks 4
(c) 1] 3 vks 4 (d) ; s I Hkh

85. ykd I Hkk vks jkT; I Hkk ds chp xfrjksk dh fd lFLkfr@fdu lFLkfr; ka ea I a n dh I a Dr cBd cy/kbz tkrh gs

- 1- I k/kkj.k fo/ks d dks ikfjr djus dh lFLkfr ea
- 2- /ku&fo/ks d dks ikfjr djus dh lFLkfr ea
- 3- I fno/kku I a kksku fo/ks d dks ikfjr djus dh lFLkfr ea

fuEufyf[kr dW/ka ds vk/kkj ij I gh mRrj pfu,

- (a) d0y 1 (b) 2 vks 3
(c) 1 vks 3 (d) ; s I Hkh

86. Hkkjr ds I fno/kku ea d1nz vks jkT; ka ds chp fd, x, 'kfDr; ka ds foHkktu buea l sfdl ea mfYyf[kr ; kstuk ij vk/kkfjr gs

- (a) eky1 fe.Vks I qkkj] 1909
(b) ekUvX; & pEl QkMz vf/kfu; e] 1919
(c) Hkkjr I jdkj vf/kfu; e] 1935
(d) Hkkjrh; LorU=rk vf/kfu; e] 1947

87. Match the followings :

- | | |
|-------------------|--------------------|
| List-I | List-II |
| A. Barbosa | 1. Krishna Dev Rai |
| B. Adbul Razzaq | 2. Devrai-I |
| C. Nooniz | 3. Devrai-II |
| D. Nicolo-D-Conty | 4. Achyut Rai |
- Choose the correct answer using the codes given below :

- | | |
|----------------|----------------|
| A B C D | A B C D |
| (a) 1 3 4 2 | (b) 2 3 4 1 |
| (c) 3 2 4 1 | (d) 4 1 2 3 |

88. Moving towards West from the East arrange the following ancient states in proper sequence :

- (a) Ang, Kashi, Koshal, Vatsa
- (b) Kashi, Anga, Koshal, Vatsa
- (c) Koshal, Kashi, Anga, Vatsa
- (d) Vatsa, Anga, Kashi, Koshal

89. When solar flares reach the Earth's Atmosphere after colliding with air & dust particles, it produces colorful effect which is known as Aurora Borealis. Aurora Borealis occurs on :

- (a) North Pole
- (b) South Pole
- (c) Equator
- (d) Sub Arctic

90. **Statement I :** When the Earth is at minimum distance from the Sun it is called- Perihelion

Statement II : It occurs on 3rd of January

- (a) Both statements are correct
- (b) Both statements are incorrect
- (c) Statement I is correct & II is incorrect
- (d) Statement II is correct & I is incorrect

91. **Assertion :** High tides occurs always when New Moon or Full Moon occurs & form SYZYGY.

Reason : The combined forces of the Sun & Moon result into high tides :

- (a) Both are correct & statement II is explanation of statement I
- (b) Both are correct but statement II is not related with statement I
- (c) Both are incorrect
- (d) Only Statement I is correct

87. fuEu dks l efsyr dhft , %

- | | |
|----------------------|----------------|
| I ph-I | I ph-II |
| A. ckjckd k | 1. -".k nØ jk; |
| B. vCngy jTtkd | 2. nØjk; -I |
| C. ufut | 3. nØjk; -II |
| A. fudksyk&Mh&dks Vh | 4. vP; r jk; |
- uhps fn; s x; s dlvka dh l gk; rk l s l gh mRrj nhft , %

- | | |
|----------------|----------------|
| A B C D | A B C D |
| (a) 1 3 4 2 | (b) 2 3 4 1 |
| (c) 3 2 4 1 | (d) 4 1 2 3 |

88. iwZl sif'pe dh vkj c<fsgg fuEufyf[kr ikphu jkT; ka dk l gh Øe g%

- (a) vax] dk' kh] dks ky] oRI
- (b) dk' kh] vax] dks ky] oRI
- (c) dks ky] dk' kh] vax] oRI
- (d) oRI] vax] dk' kh] dks ky]

89. tc l ksj yi Vaok; qRfkk /koy dsd. kka l sVdjkus ds i'pkr iFoh dsok; e. My ea iØsk djrh gârks og , d jaxhu n' ; mRi lu djrh gârtI svlksjk cksj ; kfyI dgrs gâ vksjk k cksj ; kfyI ifj?kVuk ?kVrh gâ

- (a) mYkjh /kØ ij
- (b) nff{k.k /kØ ij
- (c) fo"koR-j[kk ij
- (d) mi vkdlVd {ks= ea

90. dFku%& tc iFoh dh njh l wZl sfudVre gkrh gs rks bl sPerihelion ¼ wZl ehi d½ dgrs gâ dFku%I& ; g 3 tuojh dks ?kVrh gâ

- (a) nksuka dFku l R; gâ
- (b) nksuka dFku vl R; gâ
- (c) dFku&I l R; gs ijUrqdFku&II vl R;
- (d) dFku&II l R; gs ijUrqdFku&I vl R;

91. vfkkdFku %l eqz ea Åph ygja geskk rHkh mBrh gâtc vekoL; k vFkok i fi.kk gkrh gSRfkk SYZYGY dh fLFkfr curh gs

- dkj.k % l wZ rFkk plnek dk l kefigd cy mPp ygjka dks mRi lu djrk gs**
- (a) nksuka dFku l R; gâ , oa dFku&II, dFku&I, dh l gh 0; k[; k djrk gâ
 - (b) nksuka dFku l R; gâ ijUrqdFku&II, dFku&I, dh l gh 0; k[; k ugha djrkA
 - (c) nksuka dFku vl R; gâ
 - (d) dØy dFku&I l R; gâ

92. Mistral is a :
 (a) Warm wind with a lot of dust
 (b) Local wind over the Rhine valley
 (c) Cold wind down the Rhine valley
 (d) Cold wind in USA
93. Which two seas are connected by the Suez canal?
 (a) Red Sea & Arabian Sea
 (b) Red Sea & Mediterranean Sea
 (c) Arabian Sea & Mediterranean Sea
 (d) North Sea & Adriatic Sea
94. Pangia divided into Angaraland & Gondwana land in which period :
 (a) Triassic Period (b) Cenozoic Period
 (c) Paleocene Period (d) Eocene Period
95. Which country is engaged in Humanitarian Assistance and Disaster Relief (HADR) Table Top Exercise Siam Bharat 2017 with India?
 (a) Sri Lanka (b) Singapore
 (c) Russia (d) Thailand
96. Which state has become the first to accept the January-December financial year in place of the existing April-March?
 (a) Uttar Pradesh (b) Madhya Pradesh
 (c) Rajasthan (d) Maharastra
97. Which team has won Azlan Shah Cup Hockey tournament 2017?
 (a) Britain (b) Australia
 (c) Malaysia (d) New Zealand
98. A new premier train service between Mumbai and Goa has been started in June. What is the name of this train?
 (a) Tejas Express
 (b) Vivek Express
 (c) Mumbai -Goa Express
 (d) Konkan Express
92. Mistral g&
 (a) /kwɪsɪfjɪwɪz, d xelgokA
 (b) jkbZu ?kkVh ds Åij iokfgr gkus okyh , d LFKkuh; gokA
 (c) jkbZu ?kkVh ds uhps cgus okyh B&h gokA
 (d) vefj dk ea cgus okyh , d B&h ok; Å
93. Lost ugj fdu nks l kxjka dks tkM&h gS
 (a) yky l kxj rFkk vjc l kxj
 (b) yky l kxj rFkk Hkæ/; l kxj
 (c) vjc l kxj rFkk Hkæ/; l kxj
 (d) mYkj h l kxj rFkk , fM& kfv d l kxj
94. fdl dky ea ift; k vakjk Hkæ , oa xk&lokuk Hkæ ea foHk&tr gq/k
 (a) Vt; fl d dky ea (b) l hukst&bd dky ea
 (c) ify; kd hu dky ea (d) b; kd hu dky ea
95. dks l k nsk Hkjr ds l kfk 'fl ; ke Hkjr* & 2017 uked ekuoh; l gk; rk rFkk vki nk jkgr (HADR) mPp i kFkfedrk vH; kl ea 'kkfey gS
 (a) Jhy&dk (b) fl aki g
 (c) : l (d) Fkk&SM
96. buel s dks l k , d k igyk jkT; gsf l usor&ku vi&y&ekpZ foUk; o"lz ds ctk; tuojh&fnl Ecj foUk; o"lz izkkyh dks viuk; k gS
 (a) mYkj in&sk (b) e/; in&sk
 (c) jkT LFKku (d) egkj"V&
97. fdl Vhe us o"lz 2017 dk vtyku 'kkg gkdh Vuk&esV thrk gS
 (a) fc&ku (b) vkLVfy; k
 (c) eys'k; k (d) U; nch&SM
98. efjcbZ rFkk xkok ds e/; , d ubz ihfe; j V& l ok tu l si kjEHk dh x; hA bl j&y&xkVh& dk uke D; k gS
 (a) rst l , DI id
 (b) foocd , DI id
 (c) efjcbZ xkok , DI id
 (d) dkd.k , DI id

99. Which of the following internet-based interface was launched recently to provide direct and effective solutions to the problems faced by farmers and stakeholders in the agriculture sector?

- (a) E-KrishiSamvad
- (b) E- KrishiMitra
- (c) E-Krishi
- (d) E-KisanMitra

100. Who among the following is elected as head of FIFA governance committee ?

- (a) Vinay mohan kwatra
- (b) Moon Jae
- (c) Emmanuel Macron
- (d) Justice Mukul Mudgal

99. buel sfdl b/vjuv&vk/kfjr vr%l pkj izkkyh dh 'kq vkr df" k {ks= l s tM\$ fdl kuka rFkk fgr/kkj dka ds l e{k ekSt m l eL; kvka dk iR; {k rFkk i hkkoh gy mi yC/k djkus dsmiS; l s dh xbλ

- (a) b&df" k l okn
- (b) b&df" k fe=
- (c) b&df" k
- (d) b&fdl ku fe=

100. fuEufyf[kr eal sfdl sQhQk (FIFA) dh i z kkl dh; l fefr dk v/; {k ppu k x; k gS

- (a) fou; ekgu Dok=k
- (b) eu tbz
- (c) besuq y eSku
- (d) U; k; efr l epy enxy

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le; % nls?k/s

i wkkl % 400

vuqsk

- 1- ijh{k.k ikjEHk gkus ds rjUr ckn] vki bl ijh{k.k iqlrdk dh iMfky vo"; dj yafd bl ea dkbZ fcuk Nik QV; ;k NWk gqvk i'B vFkok iz'ukad vkfn u gkA ;fn ,dk gS rks bl sl gh ijh{k.k iqlrdk l scny yhfT, A
- 2- -i ; k /; ku j [ka fd OMR mYkj&i=d e] mfr LFku ij] jky uEcj /; ku l s ,oafcu fdl h pnd ; k fol xfr ds Hkjus vlg dWc) djus dh fEenkh mEhnokj dh gA fdl h Hkh izdkj dh pnd@fol xfr dh fLFkr ea mYkj&i=d fujLr dj fn;k tk; xkA
- 3- bl ijh{k.k iqlrdk ij l kFk ea fn, x, dksBd ea vki dks viuk vuqekad fy[kuk gA ijh{k.k iqlrdk ij vlg dN u fy[ka
- 4- bl ijh{k.k iqlrdk ea dty 100 iz'ukad 1/2 u 1/2 fn, x, g] Hkx I & xf.kr] foKku vlg Hkx II - vxatj l leku; l prrkA iR; d iz'ukad ea pkj iR; vj 1/2 fn, x, gA buela s, d iR; vj dks pu y] ftl s vki mYkj&i=d ij vdr djuk pkgrs gA ;fn vki dks ,dk yxsfd ,d l s vf/kd iR; vj l gh gS rks ml iR; vj dks vdr dja tks vki dks l okke yxkA iR; d iz'ukad ds fy, dty ,d gh iR; vj puuk gA
- 5- vki dks vius l Hkh iR; vj vyx l s fn, x, mRj&i=d ij gh vdr djus gA mRj&i=d ea fn, x, fun'k n[tk, A
- 6- qR; d c'ukak pkj 1/2 val dk gA
- 7- bl l sigysfd vki ijh{k.k iqlrdk ds foHku iz'ukak ds iR; vj mRj&i=d ij vdr djuk "kq dj] vki dks i dsk i ek.k&i= ds l kFk i'kr vuqsk ds vuq kj dN foj.k mRj&i=d ea nus gA
- 8- vki vius l Hkh iR; vj dks mRj&i=d ea Hkjus ds ckn rFk ijh{k.k ds l eku ij dty mRj&i=d v/kld dks l ka na vki dks vius l kFk ijh{k.k iqlrdk ys tkus dh vuqfr gA
- 9- dPps dke ds fy, i=d ijh{k.k iqlrdk ds vUr ea l yXu gA
- 10- xyr mRjka ds fy, n.M%
oLrfu'B iz'u&i=ka ea mEhnokj }jkj fn, x, xyr mYjka ds fy, n.M fn;k tk, xkA
(i) iR; d iz'u ds fy, pkj odfYir mRj gA mEhnokj }jkj iR; d iz'u ds fy, fn, x, ,d xyr mRj ds fy, iz'u gqfu; r fd, x, valka dk ,d 1/2 val n.M ds : i ea dVv tk, xkA
(ii) ;fn dkbZ mEhnokj ,d l s vf/kd mRj nrk gS rks bl s xyr mYj ekuk tk, xk] ; |fi fn, x, mYjka ea l s, d mYj l gh gsrk gS fQj Hkh ml iz'u ds fy, mi; rkuq kj gh ml h rjg dk n.M fn;k tk, xkA
(iii) ;fn mEhnokj }jkj dkbZ iz'u gy ughaf; k tkrk gS vFkr-mEhnokj }jkj mYj ughaf; k tkrk gS rks ml & iz'u ds fy, dkbZ n.M ughaf; k tk, xkA

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