



BRAIN OF HIMACHAL

ASPIRE TALENT HUNT EXAM FOR

CLASS 11th - QUESTION PAPER

Time: 120 Minutes

Maximum Marks: 400

INSTRUCTIONS:

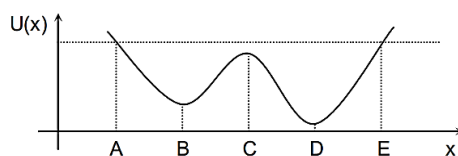
Read the instructions carefully. 5 minutes are allowed specifically for this purpose.

1. Answer all questions
2. This booklet is your question paper containing **100** questions
3. The question paper consist of **5 sections** I, II, III, IV, V.
4. Section-I **Physics** (Questions -1 to 30), Section-II **Chemistry** (31-60), Section-III **Mental ability**(60-100).
5. Each question has **only one correct** answer. Once you have marked an option you can't mark a fresh option
6. For each **correct** answer **+4** marks will be awarded. For **wrong** answer **-1** mark will be deducted.
7. Fill your **OMR** sheet carefully.
8. All the Notations used in this paper are standard.
9. No use of electronic gadgets, calculators, mobile phones etc are allowed.
10. **In case of any discrepancy do not ask anyone one including your invigilator. Try to attempt question and mark the best possible answer.**

Roll No.										
----------	--	--	--	--	--	--	--	--	--	--

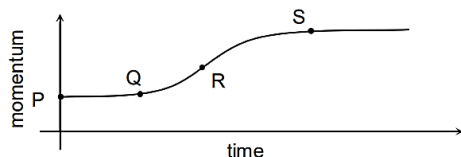
Section-I (Physics)

- Displacement of an oscillating particle is given by $y = A \sin(Bx + Ct + D)$ where x is position of the particle, t is time and A, B, C, D are constants. The dimensional formula for $[ABCD]$ is
 (A) $[M^0 L^1 T^{-1}]$ (B) $[M^0 L^{-1} T^0]$
 (C) $[M^0 L^0 T^{-1}]$ (D) $[M^0 L^{-1} T^{-1}]$
- Let $\vec{v}$ and $\vec{a}$ be the instantaneous velocity and the acceleration respectively of a particle moving in a plane. The magnitude of rate of change of speed $\frac{d|\vec{v}|}{dt}$ of the particle is
 (A) $|\vec{a}|$ (B) $\frac{|\vec{v} \cdot \vec{a}|}{|\vec{v}|}$
 (C) $\frac{|\vec{v} \times \vec{a}|}{|\vec{v}|}$ (D) $\frac{|\vec{v} \cdot \vec{a}|}{|\vec{a}|}$
- The maximum tension in the string of a simple pendulum is three times the minimum tension. If θ_0 be the angular amplitude, then $\cos \theta_0$ is
 (A) $\frac{1}{2}$ (B) $\frac{3}{4}$
 (C) $\frac{3}{5}$ (D) $\frac{2}{3}$
- A particle moves in one dimension in a conservative force field. The potential energy is depicted in the graph. If the particle starts to move from rest from the point A, then choose the INCORRECT Statement.



- The speed is zero at the points A and E
- The acceleration vanishes at the points A, B, C, D, E
- The acceleration vanishes at the points B, C, D
- The speed is maximum at point D

- Variation of momentum with time of one of the bodies in a two-body collision is shown in the figure. The instantaneous force is maximum corresponding to the point



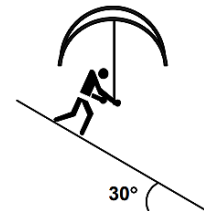
- P
- Q
- R
- S

Rough work

6. A stone of mass m , tied to the end of string is whirled around in a horizontal circle. The length of string is reduced gradually keeping the angular momentum of the stone about the centre of circle constant. The tension in the string is proportional to r^n where r is the instantaneous radius of circle. What is the value of n . (neglect force of gravity)?

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

7. A man is coming down an incline of angle 30° . When he walks with speed $2\sqrt{3}$ m/s, he has to keep his umbrella vertical to protect himself from rain. The actual speed of rain is 5 m/s. at what angle with vertical should he keep his umbrella when he is at rest so that he does not get drenched?



(A) 0° (B) 30°
(C) 37° (D) 53°

8. An elevator of mass M is accelerated upwards by applying a force F . A mass m initially situated at a height of 1 m above the floor of the elevator is falling freely. It will hit the floor of the elevator after a time equal to:

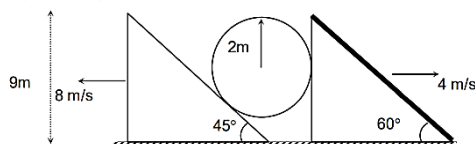
(A) $\sqrt{\frac{2M}{F+mg}}$ (B) $\sqrt{\frac{2M}{F+Mg}}$
(C) $\sqrt{\frac{2M}{F}}$ (D) $\sqrt{\frac{2m}{F}}$

9. A wooden cube is placed on a rough horizontal table. A force is applied to cube. Gradually the force is increased. Whether the cube slides before toppling or topples before sliding is independent of

(A) the position of point of application of the force
(B) the length of the edge of the cube
(C) mass of the cube
(D) coefficient of friction between the cube and the table.

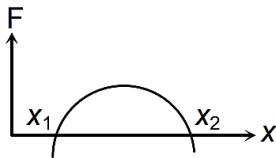
10. As shown in diagram, two wedges of same height are placed on a smooth surface, and moving in opposite direction with constant velocity. A sphere is placed in such a way that the contact between wedges and sphere is maintained throughout motion. Velocity of sphere will be

(A) $2\sqrt{10}$ (B) 12
(C) 4 (D) $4\sqrt{10}$

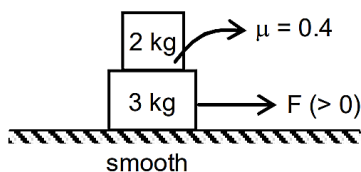


Rough work

11. A completely filled closed aquarium is kept on a weighing machine. It can be assumed that the density of the fish is greater than the density of the water. The total mass of the aquarium and its content put together is M . If now all the fish start accelerating upward with an acceleration A , then choose the correct alternative.
- (A) The weight recorded will be equal to Mg .
 (B) The weight recorded will be less than Mg .
 (C) The weight reading will be more than Mg .
 (D) No conclusion can be drawn from the given information.
12. The force acting on a body moving along x -axis varies with the position of the particle as shown in the graph. The body is in stable equilibrium at



- (A) $x = x_1$ (B) $x = x_2$
 (C) both x_1 and x_2
 (D) neither x_1 and x_2
13. The acceleration(s) of block of 2 kg cannot be



- (A) 1 m/s^2 (B) 5 m/s^2
 (C) 4 m/s^2 (D) 2 m/s^2
14. A stone tied to a string of length L is whirled in a vertical circle with the other end of the string at the centre. At a certain instant of time, the stone is at its lowest position and has a speed u . The magnitude of the change in its velocity as it reaches a position where the string is horizontal is:
- (A) $\sqrt{u^2 - 2gL}$ (B) $\sqrt{2gL}$
 (C) $\sqrt{u^2 - gL}$ (D) $\sqrt{2(u^2 - gL)}$
15. A ball falls vertically on a floor, with momentum p , and then bounces repeatedly, the coefficient of restitution is e . The total momentum imparted by the ball to the floor is

Rough work

(A) $p(1 + e)$

(B) $\frac{p}{1-e}$

(C) $p \frac{(1+e)}{(1-e)}$

(D) $p \left(1 - \frac{1}{e}\right)$

16. A homogeneous chain of length ' L ' lies on a table. The coefficient of friction between the chain and table is μ . The maximum length which can hang over the table in equilibrium is

(A) $\left(\frac{\mu}{\mu+1}\right)L$

(B) $\left(\frac{1-\mu}{\mu}\right)L$

(C) $\left(\frac{1-\mu}{1+\mu}\right)L$

(D) $\left(\frac{2\mu}{\mu+1}\right)L$

17. Two stones are projected simultaneously with same speed 10 ms^{-1} from same point. The range of both is same and equal to $5\sqrt{3} \text{ m}$. Find the difference in their time of flight. ($g = 10 \text{ m/sec}^2$)

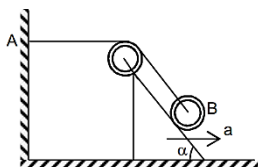
(A) $\sqrt{3} \text{ s}$

(B) 1 s

(C) $(\sqrt{3} - 1)s$

(D) 2 s

18. A weightless inextensible rope rests on a stationary wedge forming an angle α with the horizontal. One end of the rope is fixed to the wall at point A. A small load is attached to the rope at point B. The wedge starts moving to the right with a constant acceleration a . The magnitude of acceleration of the load is given by:



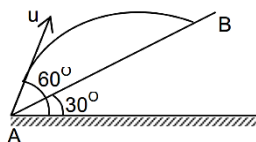
(A) a

(B) $2a \sin \frac{\alpha}{2}$

(C) $a \sin \alpha$

(D) $g \sin \alpha$

19. The time taken by the projectile to reach from A to B is t . Then the distance AB is equal to



(A) $\frac{ut}{\sqrt{3}}$

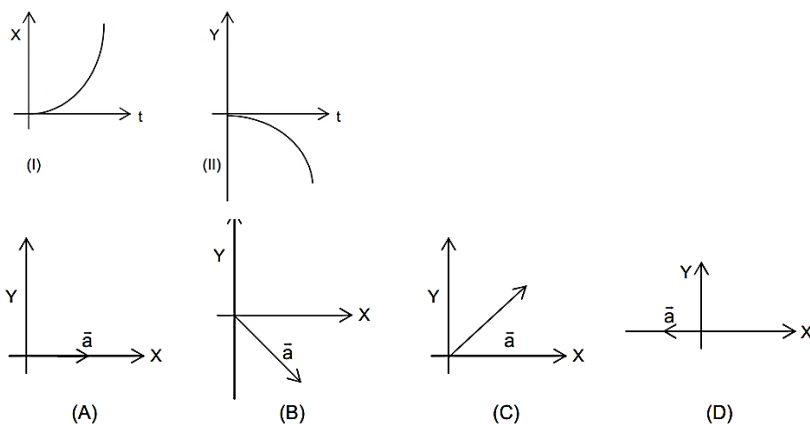
(B) $\frac{\sqrt{3} ut}{2}$

(C) $\sqrt{3} ut$

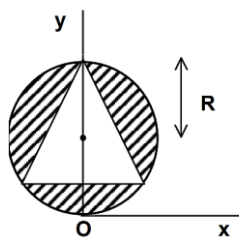
(D) $2 ut$

Rough work

20. Graphs I and II give coordinates $x(t)$ and $y(t)$ of a particle moving in the $x - y$ plane. Acceleration of the particle is constant and the graphs are drawn to the same scale. Which of the vector shown in options best represents the acceleration of the particle:



21. From a uniform disc of radius R an equilateral triangle of side $\sqrt{3}R$ is cut as shown. The new position of centre of mass is



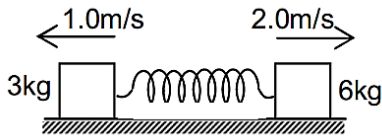
- (A) $(0,0)$ (B) $(0,R)$
 (C) $(R,0)$ (D) $\left(0, \frac{\sqrt{3}}{2R}\right)$
22. A shell is fired from a cannon with a velocity $V(\text{m/s})$ at an angle θ with the horizontal direction. At the highest point in its path, it explodes into two pieces of equal masses. One of the pieces retraces its path to the cannon and the speed (in m/s) of the other piece immediately after the explosion is
- (A) $3 V \cos \theta$ (B) $2 V \cos \theta$
 (C) $\frac{3}{2} V \cos \theta$ (D) $\frac{\sqrt{3}}{2} V \cos \theta$
23. Under the action of a force, a 2 kg, body moves such that its position x as a function of time is given by

Rough work

$x = \frac{t^3}{3}$ the work done by the force in the first 2 sec is

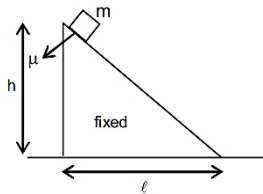
- (A) 1600 J (B) 160 J
(C) 16 J (D) 1.6 J

24. Two blocks of mass 3 kg and 6 kg respectively are placed on a smooth horizontal surface. They are connected by a light spring of force constant $K = 200 \text{ N/m}$. Initially the spring is unstretched. The indicated velocities are imparted to the blocks. The maximum extension of the spring will be



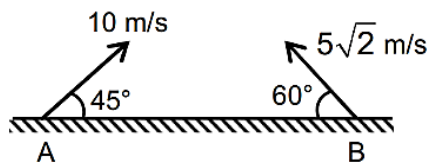
- (A) 30 cm (B) 25 cm
(C) 20 cm (D) 15 cm

25. The block slides down the inclined plane when placed on the top of the incline. The speed of the block when it reaches the ground will be



- (A) $\sqrt{g\ell + \mu gh}$ (B) $\sqrt{2gh - 2\mu g\ell}$
(C) $\sqrt{2g\ell - 2\mu gh}$ (D) $\sqrt{2gh + 2\mu g\ell}$

26. The path followed by A as seen from B will be

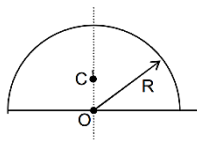


- (A) Parabolic (B) Straight line
(C) Curvilinear (D) Cannot say

Rough work

27. A man of mass M stands at one end of a plank of length L which lies at rest on a frictionless surface. The man walks to the other end of the plank. If the mass of the plank is $M/3$, the distance that the man moves relative to the ground is
- (A) $\frac{3L}{4}$ (B) $\frac{4L}{5}$
 (C) $\frac{L}{4}$ (D) $\frac{L}{3}$

28. The centre of mass of a half disc shown is at C while O is the centre, thus OC is



- (A) $R/2$ (B) $2R/\pi$
 (C) $\frac{4R}{3\pi}$ (D) none of these
29. A particle of mass m is moving with a velocity of $(4\hat{i} - \hat{j})\text{m/s}$ when it hits a wall and rebounds with a velocity $(\hat{i} + 3\hat{j})\text{m/s}$. Then the impulse it receives is
- (A) $m(3\hat{i} + 4\hat{j})$ (B) $m(-3\hat{i} + 4\hat{j})$
 (C) $m(3\hat{i} - 4\hat{j})$ (D) $-m(3\hat{i} + 4\hat{j})$
30. A block of mass m moving at a velocity v collides with another block of mass $2m$ at rest. The lighter block comes to rest after collision. Find the coefficient of restitution
- (A) $\frac{1}{2}$ (B) 1
 (C) $\frac{1}{3}$ (D) $-\frac{1}{2}$

Rough work

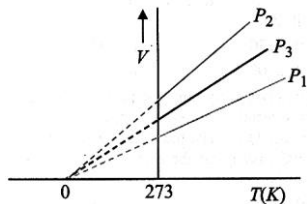
Section-II (Chemistry)

31. 1 CC at N_2O at NTP contain?
 (a) $\frac{1.8}{224} \times 10^{22}$ atoms (b) $\frac{6.02}{22400} \times 10^{23}$ molecules
 (c) $\frac{1.32}{224} \times 10^{23}$ electrons (d) All the above.
32. Equal mass of Fe_2O_3 and FeO has mass of oxygen in the ratio
 (a) 1.35 (b) 0.74
 (c) 0.37 (d) 2.7
33. Calculate the mass of CaO obtained by heating 200 kg of 95% pure limestone.
 (a) 83.6 kg (b) 8.36 kg
 (c) 190 kg (d) 19.0 kg
34. A compounds contain two elements X' & Y in the ratio of 50% each Atomic mass of X' is 20 and Y is 40 what can its simplest formula?
 (a) x_2y (b) XY
 (c) X_2 (d) x_3Y
35. 1 gram Mg is burnt in 0.56 gram oxygen then find which reagent is left in reaction mixture and how much?
 (a) 0.84 g (b) 8.4 g
 (c) 0.017 g (d) 0.17 g
36. If the radius of 2^{nd} orbit of $He^{\oplus}$ is x pm. Then find radius of 3^{rd} orbit of Be^{3+} ?
 (a) $1.1 \times pm$ (b) $0.11 \times pm$
 (c) $2.1 \times pm$ (d) $2.2 \times pm$
37. The set representing the correct order of ionic radius is
 (A) $Na^+ > Mg^{2+} > Al^+ > Li^+ > Be^{2+}$
 (B) $Na^+ > Li^+ > Mg^{2+} > Al^{3+} > Be^{2+}$
 (C) $Na^+ > Mg^{2+} > Li^+ > Al^{3+} > Be^{2+}$
 (D) $Na^+ > Mg^{2+} > Li^+ > Be^{2+}$
38. The electronic configuration of four elements are
 (I) $[Kr]5s^1$ (II) $[Rn]5f^{14}6d^17s^2$
 (III) $[Ar]3d^{10}4s^24p^5$ (IV) $[Ar]3d^64s^2$
 Consider the following statements
 (i) I shows variable oxidation state
 (ii) II is a d-block element
 (iii) The compound formed between I and III is covalent
 (iv) IV shows single oxidation state.
 Which statement is True (T) or False (F).
 (A) FTFF (B) FTFT
 (C) FFTF (D) FFFF
39. Which of the following statement is/are incorrect?
 (1) On moving in a period electron gain enthalpy decreases.
 (2) On moving top to bottom in a group usually ionization energy decreases.

Rough work

- (3) As atomic number increases atomic radius decreases.
- (4) Size of ions change as $C^{-4} < N^{-3} < O^{-2} < F^{-}$
- (5) Electron affinity for addition of electron in different orbitals of 4th shell in order of $4s > 4p > 4d > 4f$
- (6) Polarising power of cation in a 1st group from top to bottom decreases.
- (A) 3 and 6 (B) 3,5 and 6
(C) 2 and 6 (D) 1,3 and 4
40. The incorrect order among the following is
(A) $Cl > F > Br > I$ (Electron affinity)
(B) $O^{-2} > F^{-} > Na^{+} > Mg^{2+}$ (Ionic size)
(C) $N > O > B > Be$ (1st ionization energy, IE_1)
(D) $F > O > N > Br$ (Electronegativity)
41. Which of the following sequence given below is correct regarding ionization potential?
(A) $N > F > S > P$
(B) $F > N > S > P$
(C) $F > N > P > S$
(D) $F > S > P > N$
42. The correct order of strength of H-bond in the following compound :
(B) $HF > H_2O_2 > H_2O > H_2S$
(A) $H_2O > H_2O_2 > HF > H_2S$
(b) $HF > H_2O > H_2O_2 > H_2S$
(C) $HF > H_2O > H_2S > H_2O_2$
43. The increasing order of dipole moment $SO_2(X)$, $H_2O(Y)$, $CO_2(Z)$ is :
(A) $Z < X < Y$ (B) $Z < Y < X$
(C) $Y < Z < X$ (D) $Z < Y \approx X$
44. Which of the following pair of molecules have identical shape?
(A) BrF_5 , $XeOF_4$ (B) XeO_4 , SF_4
(C) ClF_3 , XeO_3 (D) SO_2 , CO_2
45. The increasing order of bond angle in H_2O , OF_2 , Cl_2O and ICl_2^{-} is-
(A) $H_2O < OF_2 < Cl_2O < ICl_2^{-}$
(B) $OF_2 < H_2O < Cl_2O < ICl_2^{-}$
(C) $OF_2 < H_2O < ICl_2^{-} < Cl_2O$
(D) $ICl_2^{-} < Cl_2O < H_2O < OF_2$
46. In which of the following pair, both the species have the same bond order?
(A) $[N_2, N_2^{+}]$ (B) $[O_2, F_2]$
(C) $[C_2, O_2]$ (D) $[C_2, N_2]$
47. Which of the following molecule is not planar?
(A) SO_3 (B) $N(SiH_3)_3$
(C) NF_3 (D) BF_3

Rough work

48. In which of the following molecular species axial bond length is shorter than equatorial bond length-
 (A) PF_2Cl_3 (B) PF_5
 (C) XeO_3F_2 (D) IO_2F_2^-
49. In which of the following compounds B – F bond length is shortest ?
 (A) BF_4^- (B) $\text{BF}_3 \leftarrow \text{NH}_3$
 (C) BF_3 (D) $\text{BF}_3 \leftarrow \text{N}(\text{CH}_3)_3$
50. Which of the following attraction is strongest ?
 (A) $\text{Cl}^- \cdots \text{H}-\text{Cl}$ (B) $\text{CHCl}_3 \cdots \text{CHCl}_3$
 (C) $\text{CCl}_4 \cdots \text{H}_2\text{O}$ (D) $\text{Cl}^- \cdots \text{H}_2\text{O}$
51. If an ideal monoatomic gas heated at constant Volume to increase its temp by 1°C , the increase in its kinetic energy is?
 (a) 1.5 (b) $1.5R$
 (c) $\frac{3}{2}RT$ (d) $\frac{3}{2}R(T + 1)$
52. The critical density of oxygen at 300 K is $0.4\text{ gm}_m\text{cm}^3$. the VanderWaal constant 'b' will be approximately -?
 (a) 27cc/ml (b) 21cc/mol
 (c) 2.7cc/mal (d) 12.1cc/mol
53. The volume temperature graphs of a given mass of an ideal gas at constant pressure are shown below :
 What is the correct order of pressure?
- 
- (A) $P_1 > P_3 > P_2$ (B) $P_1 > P_2 > P_3$
 (C) $P_2 > P_3 > P_1$ (D) $P_2 > P_1 > P_3$
54. The temperature at which the root mean square velocity of SO_2 molecule is the same as that of oxygen at 27°C ?
 (a) 400 K (b) 800 K
 (c) 1200 K (d) 600 K
55. Two gases A and B have molecular weight 144 and 64 their rate of diffusion will be in the ratio.
 (a) $144:64$ (b) $64:144$
 (c) $8:12$ (d) $12:8$
56. For d-electron, the orbital angular momentum is
 (A) $\frac{\sqrt{6}h}{2\pi}$ (B) $\frac{\sqrt{2}h}{2\pi}$

Rough work

$$(C) \frac{h}{2\pi}$$

$$(D) \frac{2h}{\pi}$$

57. Which of the following is wrong electronic configuration ?

(A) $\text{Sc} = 3d^1 4s^2$

(B) $\text{Ti} = 3d^2 4s^2$

(C) $\text{Cr} = 3d^5 4s^1$

(D) $\text{V} = 3s^2 4d^2$

58. Consider the following sets of quantum numbers

	n	ℓ	m	s
(i)	3	0	0	+1/2
(ii)	2	2	1	+1/2
(iii)	4	3	-2	-1/2
(iv)	1	0	-1	-1/2
(v)	3	2	3	+1/2

Which of the following sets of quantum number is not possible?

(A) (ii), (iii) and (iv)

(B) (i), (ii), (iii) and (iv)

(C) (ii), (iv) and (v)

(D) (i) and (iii)

59. Calculate the wavelength of a photon having momentum $3.0 \times 10^{-23} \text{ kg ms}^{-1}$

(A) $2.2 \times 10^{-11} \text{ cm}$

(B) $2.2 \times 10^{-9} \text{ cm}$

(C) $3.2 \times 10^{-23} \text{ cm}$

(D) $3.2 \times 10^{-12} \text{ cm}$

60. Which of the following sequences contains atomic number of only representative elements?

(A) 3, 33, 53, 87

(B) 2, 10, 22, 36

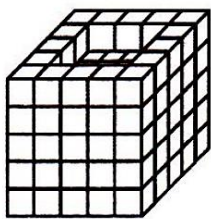
(C) 7, 17, 25, 37, 48

(D) 10, 35, 57, 88

Rough work

Section-III (Mental ability)

61. Introducing a man, a woman said, "He is the only son of my mother's mother." How is the woman related to the man ?
(1) Mother (2) Aunt
(3) Sister (4) Niece
62. Introducing a man, Neeraj said, "His wife is the only daughter of my wife." How is Neeraj related to that man?
(1) Father (2) Grandfather
(3) Father-in-law (4) Son
63. If $A \times B$ means A is to south of B; $A + B$ means A is to the north of B; $A \% B$ means A is to the east of B; $A - B$ means A is to west of B, then in $P \% Q + R - S$, S is in which direction with respect to Q ?
(1) South-West (2) South-East
(3) North-East (4) North-West
64. In a code, CORNER is written as GSVRIV. How can CENTRAL be written in that code ?
(1) DFOUSBM (2) GIRXVEP
(3) GNFKER (4) None of these
65. Amir was born on Feb 29th of 2012 which was a Wednesday. If he lives to be 101 years old, how many birthdays would he celebrate on a Wednesday?
(1) 3 (2) 4
(3) 5 (4) 1
66. What should come in the place of question mark (?) in the following alpha-numeric series? C-3, E-5, G-7, I-9, ?, ?
(1) X-24, M-21 (2) K-11, M-13
(3) O-15, X-24 (4) M-18, K-14
67. A clock which gains 10 minutes in 24 hours, is set right at 12AM. What will be the true time when the clock indicates 5AM on the following day?
(1) 4: 48AM (2) 5: 12AM
(3) 4: 50AM (4) 5: 15 AM
68. A clock is started at noon. By 10 min past 5, the hour hand has turned through :
(1) 145° (2) 150°
(3) 155° (4) 160°
69. The year next to 1896 that will have the same calendar as that of the year 1896 :
(1) 1902 (2) 1904
(3) 1905 (4) 1908
70. Some equal cubes are arranged in the form of a solid block as shown in the adjoining figure. All the visible surfaces of the block (except bottom) are then painted.

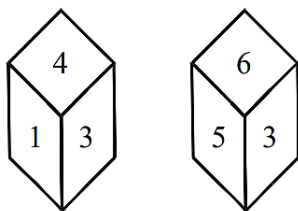


Rough work

How many cubes do not have any of the faces painted?

- (1) 27 (2) 32
(3) 36 (4) 40

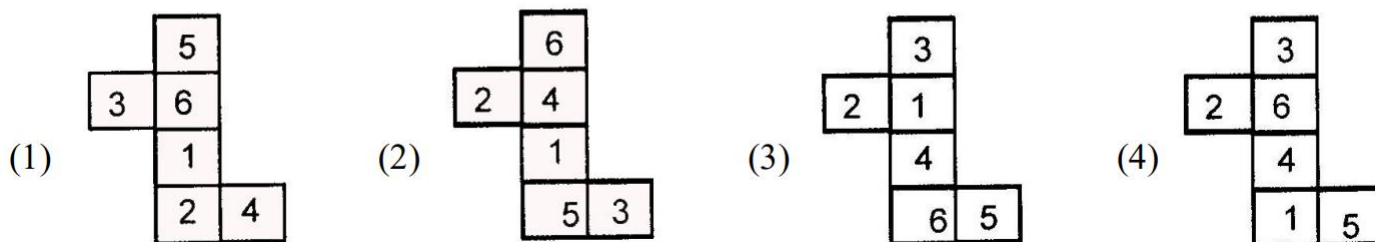
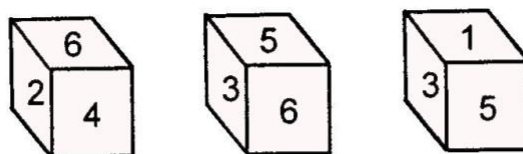
71.



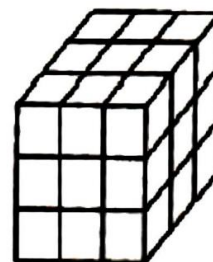
The number on opposite side of the face having number 3 will be :-

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

72. The six faces of a cube have been marked with numbers 1, 2, 3, 4, 5 and 6 respectively. This cube is rolled down three times. The three positions are given. Choose the figure that will be formed when the cube is unfolded.



73. Little wooden cubes each with a side of one inch are put together to form a solid cube with a side of three inches. This big cube is then painted red all over on the outside. When the big cube is broken up into the original little ones, how many cubes will have paint on two sides only?



- (1) 4 (2) 8 (3) 12 (4) 0

Rough work

74. How does the reflection of SJR9PZE7C18 look like in the water? Choose the right option

(1) 81C7EZE9RSJ

(2) 81C7EZE9RSJ

(3) 81C7EZE9RSJ

(4) 81C7EZE9RSJ

75. This question is based upon the information given below. Study the information carefully and then choose the correct alternative to answer the question. Five friends A, B, C, D and E are sitting on a bench.

- (1) A is sitting next to B.
- (2) C is sitting next to D.
- (3) D is not sitting with E.
- (4) E is on the left end of the bench.
- (5) C is on second position from the right.
- (6) A is on the right side of B and to the right side of E.
- (7) A and C are sitting together.

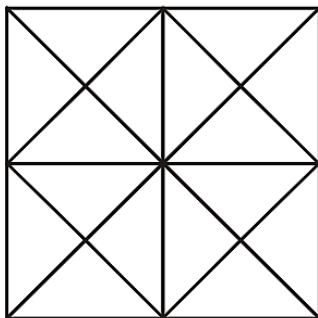
Where is A sitting?

- (1) Between B and D
- (2) Between D and C
- (3) Between C and E
- (4) Between B and C

76. If REASON is coded as 5 and BELIEVED as 7, then what is the code for GOVERNMENT?

- (1) 6
- (2) 8
- (3) 9
- (4) 10

77. Count the number of triangles and squares in the given figure



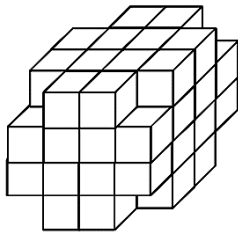
- (1) 42 triangles, 8 squares
- (2) 46 triangles, 8 squares
- (3) 44 triangles, 10 squares
- (4) 44 triangles, 12 squares

Rough work

78. In the question below, two statements are given followed by two conclusions. Take the given statement to be true despite being at variance with known facts. Find which of the given conclusion(s) logically follow(s) from the given statements.
Statements: All doraemons are nobitas. Some nobitas are jiyans.
Conclusions: I- Some doraemons are jiyans
 II- Some jiyans are nobitas
 (1) Only I follows (2) Only II follows
 (3) Either I or II follows (4) None follows
79. **Statements :**
 No giraffe is a leopard
 All leopards are kangaroos
 All kangaroos are wolfs
Conclusions : (A) All kangaroos can never be giraffes.
 (B) All giraffes are definitely wolfs.
 (1) If only conclusions (A) follows
 (2) If only conclusion (B) follows
 (3) If either conclusion (A) or conclusion (B) follows
 (4) If both conclusions (A) and (B) follow
80. If the English letters A to Z are written in a reverse order then what is the fourth letter to the right of 12th letter from the left?
 (1) K (2) J (3) R (4) L
81. The following question is based on the following information :
 (i) M% N means M is the son of N
 (ii) M a N means M is the sister of N
 (iii) M\$ N means M is the father of N
 Which of the following shows the relation that C is the granddaughter of E ?
 (1) C% B\$ F\$E (2) B \$ F \$ E % C
 (3) C@ B% F%E (4) E % B \$ F \$ C
82. A told B, "Yesterday I met the only brother of the daughter of my grand mother." Whom did A meet?
 (1) Cousin (2) Brother
 (3) Nephew (4) Father
83. My office is to the East of my house. My sister's office is to the South-East of my office. A park is to the South of my office. In which direction is my house located with respect to the Park ?
 (1) North-East (2) South-West
 (3) North-West (4) South-East
84. If CACOPHONY = 81, ALLEN = 25, PANORMA = 49, then TRANSMOGRIFY = ?
 (1) 125 (2) 144 (3) 91 (4) 121

Rough work

85. Today is Monday. After 61 days, it will be
 (1) Monday (2) Wednesday (3) Saturday (4) Friday
86. Find the missing term in the given series 235, 236, 234, 237, 233, 238,?
 (1) 232 (2) 235 (3) 237 (4) 231
87. A clock which gains uniformly is one minute slow at Noon on 26/09/2016. It is four minutes fast at Noon on 30/09/2016. When did it show the correct time ?
 (1) 28/09/2016 at 7:12am
 (2) 27/09/2016 at 7:06am
 (3) 28/09/2016 at 7:06am
 (4) 27/09/2016 at 7:12am
88. What is the angle between the hour and minute's hand, when the clock shows 30 minutes past 6?
 (1) 30° (2) 15° (3) 10° (4) 20°
89. A boy was born on 29th Feb, 1896. When will he celebrate his next birthday?
 (1) 28th Feb, 1897
 (2) 29th Feb, 1900
 (3) 29th Feb, 1904
 (4) 20th Feb, 1908
90. 10In the given figure a solid cube is painted on all sides by a single color. Observe the given solid and choose the correct alternative.

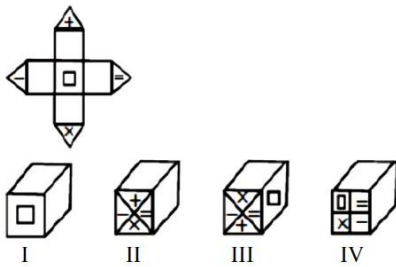


Find the total number of blocks whose only one surface is colored?

- (1) 8 (2) 12 (3) 16 (4) 24
91. Four standard dice are thrown on the ground. The total of numbers on the top faces of these four dice is 13 as the top faces showed 4, 3, 1 and 5 respectively. What is the total of the faces touching the ground?
 (1) 12 (2) 15 (3) 13 (4) 16

Rough work

92. Select the correct answer choice(s) which is/are formed by folding the unfolded dice.



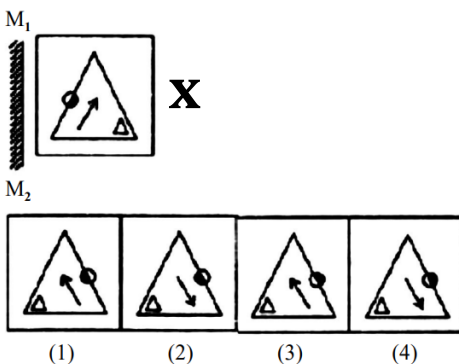
- (1) I and II (2) II and III
(3) I and III (4) II and IV

93. Faces of a large cube are painted with six different colours-Red, Violet Yellow, Green, Orange and Blue. Green and Violet are opposite to each other. Red and Orange are opposite to each other. The cube is placed on a table with the Yellow face touching the table and the Orange face is towards the front. The cube is cut into 210 identical pieces by making the least number of cuts. Out of the total cuts made the maximum number of cuts are made in the horizontal direction and the least number of cuts in the direction parallel to the Violet face.

How many pieces have atmost one face painted?

- (1) 116 (2) 124 (3) 142 (4) 154

94. In the following question, choose the correct mirror image of the figure (X) from amongst four alternatives.



95. There are six teachers A, B, C, D, E and F in a school. Each of the six teachers teaches two subjects, one compulsory subject and other optional subject. D's optional subject was History while three others have it as compulsory subject. E and F have Physics as one of their subjects. F's compulsory subject is Mathematics which is an optional subject of both C and E. History and English are A's subjects but in terms of compulsory and optional subject they are just reverse of those of D's. Chemistry is an optional subject of

Rough work

only one of them. The only female teacher in the school has English as her compulsory subject.

What is C's compulsory subject?

(1) History

(2) Physics

(3) Mathematics

(4) English

96. In a certain code language 'they have come back' is written as 'na ja sa da' and 'they have gone there' is written as 'da ka pa na'. How is 'come' written in that code language?

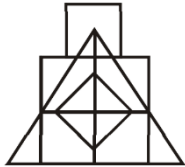
(1) sa

(2) na

(3) ja

(4) sa or ja

97.



Count the number of triangles and squares in the figure

(1) 21 triangles, 7 squares

(2) 18 triangles, 8 squares

(3) 20 triangles, 8 squares

(4) 22 triangles, 7 squares

98. Give your answer as :

(1) If only conclusion I follows

(2) If only conclusion II follows

(3) If either I or II follows

(4) If neither I nor II follows

Statement : 1. Some hats are caps.
2. Some caps are mats.

Conclusions: I. Some caps are hats.
II. Some mats are hats.

99. Statements: Some keys are staplers. Some staplers are stickers. All stickers are pens :

Conclusion : (I) Some pens are staplers
(II) Some stickers are keys
(III) No sticker is key
(IV) Some staplers are keys.

(1) Only (I) and (II) follow

(2) Only (II) and (III) follow

(3) Only (II) and (IV) follow

(4) Only (I) and (IV) and either (II) or (III)

100. If the first and the third letters in the letter group DISTRIBUTION are interchanged and also the second and fourth letters, the fifth and seventh and so on then which of the following would be seventh letter from the left?

(1) U

(2) R

(3) B

(4) T

Rough work

एस्पायर ने बरकरार रखी हिमाचल टॉपर देने की अपनी परंपरा

जेईई मेन्स परीक्षा में हिमाचल टॉपर के बाद नीट में भी दिया हिमाचल टॉपर

ड्रॉपर बैच के लिए एस्पायर संस्थान बना छात्रों की पहली पसंद, ड्रॉपर बैच के 125 छात्रों का चयन लगभग तय

शिमला: एस्पायर ने नीट व जेईई परीक्षा में टॉपर देने का मीलमिला जेईई मेन्स 2022 में फिमेल कैंटेगरी में हिमाचल टॉपर देने के बाद नीट 2022 परीक्षा परीणामों में भी कायम रखा। जेईई 2022 में एस्पायर की वाणी पराशर ने पूरे हिमाचल में फोमेल कैंटेगरी में पहला स्थान प्राप्त किया था और अब नीट 2022 परीक्षा परीणामों में एस्पायर की ही आदित्य राज शर्मा ने 720 में से 687 अंक प्राप्त कर हिमाचल में पहला स्थान प्राप्त किया है। एस्पायर संस्थान के निदेशक योगेंद्र कुमार मीणा ने आदित्य व उनके अभिभावकों को बधाई देते हुए कहा कि बच्चों की सफलता में संस्थान के शिक्षकों का योगदान के साथ इस सफलता का अंश बच्चों को महानतम उसका अभिभावकों को भी जाता है साथ-साथ बच्चों की सफलता में उन शिक्षकों का भी पूरा योगदान रहता है जिन्होंने बच्चों को प्रारंभिक शिक्षा प्रदान की है। नीट परीक्षा परीणामों में संस्थान के बच्चों ने बहुत बेहतर प्रदर्शन किया है। संस्थान के 13 बच्चों ने 600 से अधिक अंक प्राप्त किए हैं जिसमें आदित्य राज शर्मा ने 687 अंक प्राप्त किए और दिवेश शर्मा ने 651, पुलकित शाही ने 645, रिशु राज ने 640, राहीमा ने 640, निखिल ठाकुर ने 637, शिवम अत्री ने 635, सुमन भादवाज ने 625, पिपुष मेहरा ने 624, मानिक खडवाल ने 622, निखिल राज ने 617, श्रेया शर्मा ने 610 व गगनदीप कपिल ने 603 अंक प्राप्त किए। 500 से अधिक अंक प्राप्त करने वाले बच्चों की संख्या 82 है। सभी कैंटेगरी में संस्थान के 130 से ज्यादा बच्चों का एम.बी.बी.एस. के लिए चयन होना संभावित है। संस्थान के निदेशक योगेंद्र कुमार मीणा ने सभी बच्चों को इस उपलब्धि पर बधाई दी उनके उत्कृष्ट भविष्य के लिए शुभकामनाएं दीं।



नीट 2022 में उतीर्ण छात्रों के साथ एस्पायर के अध्यक्ष गण जशन मनाते हुए

आर्थिक रूप से असह्य 20 बच्चों को एस्पायर मुहैया कराया नि.शुल्क रहन-सहन व शिक्षा: जेन ऑफ हिमाचल परीक्षा के माध्यम से 20 विद्यार्थियों का चयन "एस्पायर सुपर 20" बैच के लिए किया जाएगा और उन 20 बच्चों को एस्पायर संस्थान द्वारा एक वर्ष के लिए नि:शुल्क कॉर्चिंग के साथ-साथ होस्टल में नि:शुल्क रहन-सहन व खान पान का प्रबंध भी किया जाएगा। इस बैच में प्रवेश पाने के लिए विद्यार्थियों को "जेन ऑफ हिमाचल" में बैठना अनिवार्य होगा। जेन ऑफ हिमाचल में अच्छा प्रदर्शन करने वाले बच्चों को दूसरे स्तर की परीक्षा के लिए आमंत्रित किया जाएगा। दूसरी परीक्षा में अच्छा प्रदर्शन करने वाले बच्चों को दस्तावेज सत्यापन व स्कॉलरशिप के लिए बुलाया जाएगा। दस्तावेज सत्यापन के पश्चात् "सुपर-20" बैच के लिए उतीर्ण बच्चों को सूची निकाली जाएगी। जो बच्चे अभी बाहरवीं कक्षा में पढ़ रहे हैं व 2023 में 12वीं कक्षा उतीर्ण करेंगे वे बच्चे इस बैच के लिए योग्य होंगे। इस परीक्षा के लिए विद्यार्थी 13 जुलाई से ऑनलाइन व ऑफलाइन आवेदन कर सकते हैं। ऑनलाइन आवेदन करने के लिए एस्पायर की वेबसाइट boh.aspireit.in पर जाकर विद्यार्थी अपना पंजीकरण सुनिश्चित कर सकते हैं। ऑफलाइन आवेदन के लिए विद्यार्थी शिमला विश्व एस्पायर संस्थान व उनका संस्थान में जाकर आवेदन कर सकते हैं।

NEET
हिमाचल
TOPPER
2022



687

I am Aaditya Raj Sharma. I scored 687 in NEET 2022. I would like to give credit of my success to Aspire Institute. I will always cherish my time in Aspire and I would like to express my gratitude to everyone from Aspire Family.

AADITYA RAJ SHARMA
HILLGROVE PUB. SCH. SHIMLA

JEE
हिमाचल
TOPPER
(Female)



99.7
PERCENTILE

VANI PARASHAR
HILLGROVE PUB. SCH. SHIMLA

I studied in Aspire from one year. My whole experience with this institution was great. I gained so much of knowledge and support from my teachers and Yogi sir. In my one year of journey my teachers were my motivators and guides. How to prepare for exam, what to prepare all was done with the help of Aspire Academy. I am sincerely thankful to each and every person of Aspire who helped me in my preparation and to achieve my goal.

(Divesh Sharma)



651

DIVESH SHARMA
DAV LAKKAR BAZAR, SHIMLA



645

PULKIT SHAHI
HILLGROVE. PUB.SCH. SHIMLA

I am Pulkit Shahi and I scored 645 marks in NEET 2022. I would like to give the credit to Aspire Institute for helping me turn my dreams into a reality. The faculty was always present to clear my doubts and solve problems. Even apart from studies the Academics are outstanding and I am definitely proud to be an Aspire alumni.

Admission Open -2023 -2024

CRASH COURSE
for
NEET & JEE MAINS -2023

COACHING + SCHOOLING
CLASS 11TH
SURE SELECTION BATCH

ANSWER KEY
AVAILABLE

05
OCT.2022

12
OCT.2022

RESULT
DECLARATION TOP
10

PRIZE
DISTRIBUTION

16
OCT.2022

21
OCT.2022

RESULT DECLARATION
OF ALL PARTICIPANTS