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BRAIN OF HIMACHAL 2025

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आपकी प्रतिभा, हमारा मंच - ब्रेन ऑफ़ हिमाचल

ASPIRE TALENT HUNT EXAM-2025

For 5th ,6th , 7th , 8th , 9th 10th , (11th & 12th Science)

SAPMLE TEST PAPER

CLASS 11th

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PHYSICS

1. The period of oscillation of a simple pendulum is $T = 2\pi\sqrt{L/g}$. Measured value of L is 20 cm known to 1 mm accuracy and time for 100 oscillations of the pendulum is found to be 90 s using a wrist watch of 1s resolution. What is the percentage error in the determination of g?

(a) 5% (b) 3%

(c) 4% (d) 7%

2. In an experiment, four quantities a, b, c and d are measured with percentage error 1%, 2%, 3% and 4%, respectively. Quantity P is calculated as follows $P = \frac{a^3 b^3}{cd}$, percentage error in P is

(a) 14% (b) 10%

(c) 7% (d) 4%

3. The potential energy of a particle varies with distance x from a fixed origin as $U = \frac{A\sqrt{x}}{x+B}$, where A and B are constants. The dimensions of AB are

(a) $[ML^{5/2}T^{-2}]$ (b) $[ML^2T^{-2}]$

(c) $[M^{3/2}L^3T^{-2}]$ (d) $[ML^{7/2}T^{-2}]$

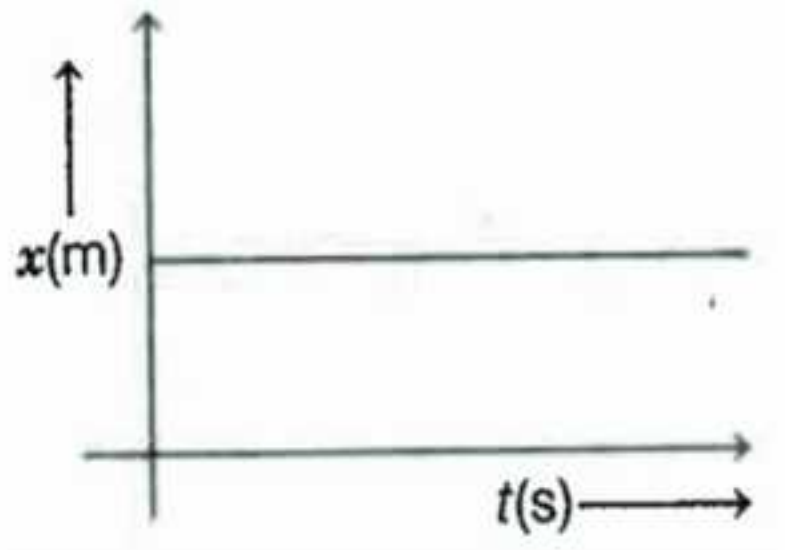
4. Find the value of power of 60 J per min on a system that has 100 g, 100 cm and 1 min as the base units.

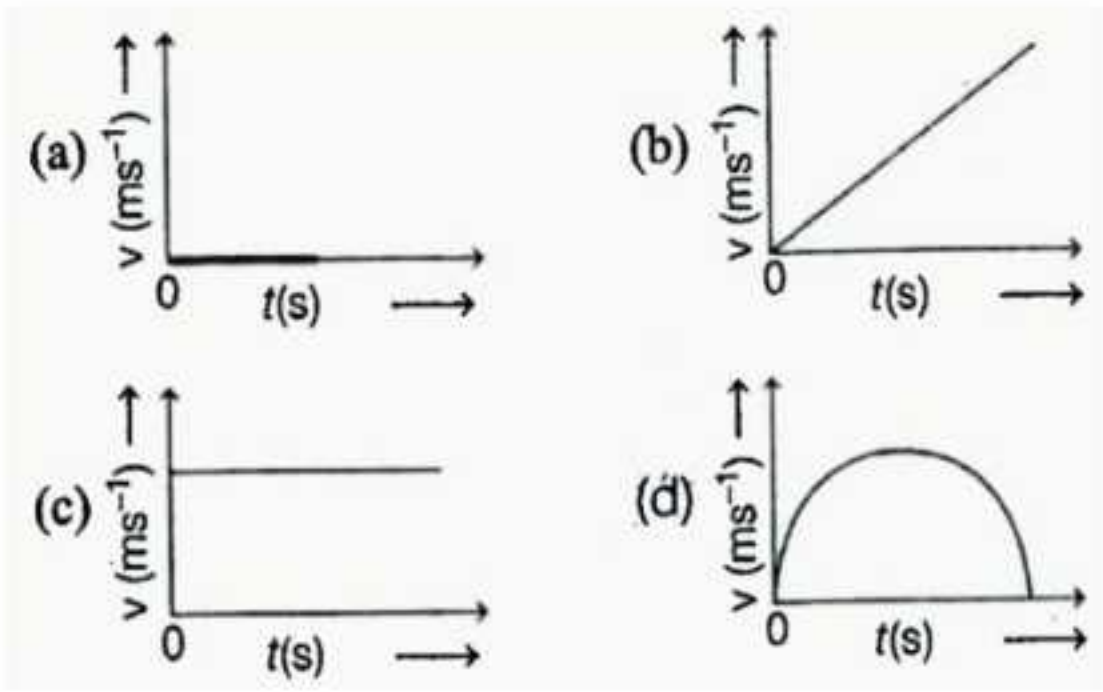
(a) 2.16×10^4 units (b) 2.16×10^6 units

(c) 3×10^4 units (d) 4×10^7 units

Rough work

5. For the x-t graph given below, the v- t graph is shown correctly in





6. A car is moving on a straight road from A to B for first one-fourth distance with speed 40 m/s and the next half with speed 80 m/s and the last one-fourth with speed 120 m/s. Then, the average speed of the car will be

(a) 49.26 m/s (b) 90.46 m/s

(c) 68.57 m/s (d) 54.26 m/s

Rough work

7. The velocity of a particle at an instant is 15 ms^{-1} After 5s, its velocity will become 25 ms^{-1}. The velocity at 4s, before the given instant will be

(a) 23 ms^{-1} (b) 7 ms^{-1}

(c) 25 ms^{-1} (d) 15 ms^{-1}

8. A jet airplane travelling at speed of 500 kmh^{-1} rejects its products of combustion at speed of 1500 kmh^{-1} relative to jet plane.

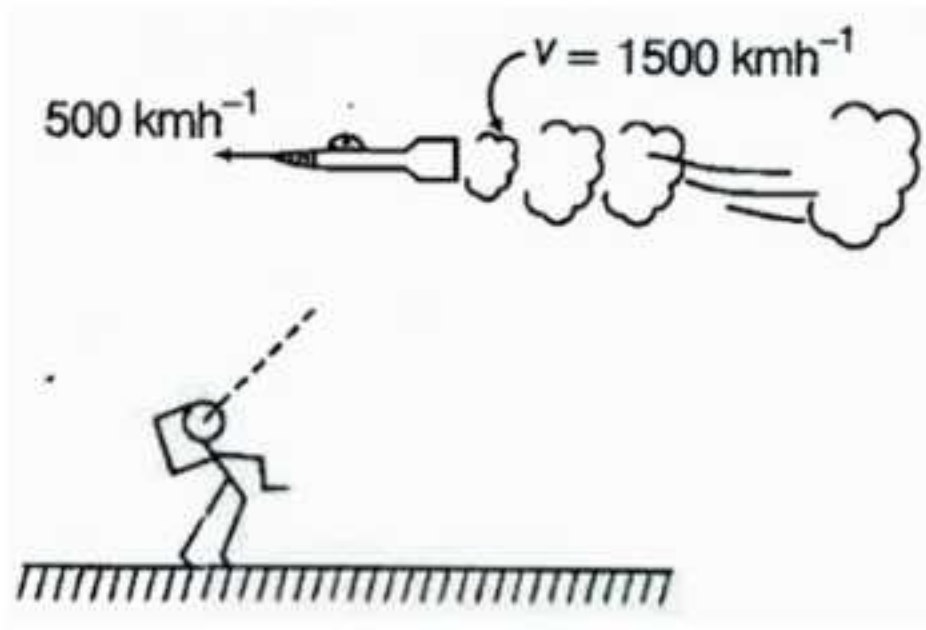
Relative speed of ejected gases with respect to an observer on the ground as shown below is

(a) 1000 kmh^{-1}

(b) 2000 kmh^{-1}

(c) 500 kmh^{-1}

(d) 1500 kmh^{-1}



9. Rain is falling vertically with a speed of 35 ms^{-1}. Winds starts blowing after sometime with a speed of 12 ms^{-1} in east to west direction. In which direction from vertical should boy waiting at a bus stop hold his umbrella?

(a) $\tan^{-1}$ (0.45),west (b) $\tan^{-1}$ (0.343), west

(c) $\tan^{-1}$ (0.343), east (d) $\tan^{-1}$ (0.24), east

Rough work

10. A mass of 10 kg is suspended by a rope of length 4 m, from the ceiling. A force F is applied horizontally at the mid-point of the rope such that the top half of the rope makes an angle of 45^0 with the vertical. Then, F equals (Take, $g = 10\ ms^{-2}$ and the rope to be massless)

(a) 75 N (b) 70N

(c) 100N (d) 90N

11. A gun applied a force F on a bullet which is given by $F = (100 - 0.5 \times 10^5\ t)$ N. The bullet emerges out with speed 400 m/s, then find out the impulse exerted till force on the bullet becomes zero.

(a) 0.2 N-s (b) 0.3 N-s

(c) 0.1 N-s (d) 0.4 N-s

12. **Every action has an equal and opposite reaction, which suggests that**

(a) action and reaction always act on different bodies

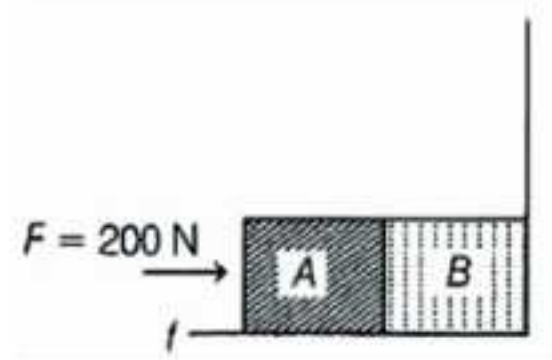
(b) the forces of action and reaction cancel to each other

(c) the forces of action and reaction cannot cancel to each other

(d) Both (a) and (c)

13. Two bodies A and B of masses 5 kg and 10 kg in contact with each other rest on a table against a rigid partition.

The coefficient of friction between the bodies and the table is 0.15. A force of 200 N is applied horizontally at A.



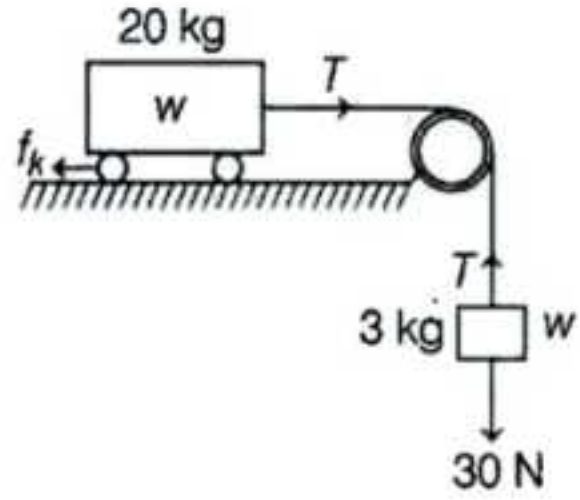
Rough work

What is the reaction of the partition?

(a) 170N (b) 204 N

(c) 177.95N (d) 174 N

14. What is the acceleration of the block and the trolley system as in figure, if the coefficient of kinetic friction between the trolley and the surface is 0.04? What is the tension T in the string? (Take, $g = 10\ ms^{-2}$, neglect the mass of the string)



(a) $a = 0.96 ms^{-2}$, T= 50N

(b) $a = 0.42\ ms^{-2}$, T = 27.1N

(c) $a = 0.96\ ms^{-2}$, T=27.1 N

(d) $a = 0.42\ ms^{-2}$, T= 42.6N

15. If a car is moving in uniform circular motion, then what should be the value of velocity of a car, so that car will not move away from the circle?

(a) $v < \sqrt{\mu_s Rg}$ (b) $v \leq \sqrt{\mu_s Rg}$

(c) $v < \sqrt{\mu_\kappa Rg}$ (d) None of these

16. A truck starts from rest and accelerates uniformly with $2\ ms^{-2}$. At t = 10 s, a stone is dropped by a person standing on the top of the truck (6 m high from the ground). What are the (i) velocity and (ii) acceleration of the stone at t = 11s? (Neglect air resistance).

(a) $22.4\ ms^{-1}$ and $9.8 ms^{-2}$ (b) $20\ ms^{-1}$ and $4.8 ms^{-2}$

(c) $12.8 ms^{-1}$ and $9.8 ms^{-2}$ (d) $25\ ms^{-1}$ and $10.2 ms^{-2}$

Rough work

17. A rocket with a lift-off mass 20000 kg is blasted upwards with an initial acceleration of 5.0 ms^2. Calculate the initial thrust (force) of the blast.

(a) 2.96×10^5 N (b) 2.4×10^4 N

(c) 1.8×10^5N (d) 3×10^8 N

18. A man stands in contact against the inner wall of a hollow cylindrical drum of radius 3 m rotating about its vertical axis. The coefficient of friction between the wall and his clothing is 0. 15. What is the minimum rotational speed of the cylinder to enable the man to remain stuck to the wall (without falling) when the floor is suddenly removed?

($R = mr\omega^2$ and $F = mg$)

(a) 4 $rads^{-1}$ (b) 4.7 $rads^{-1}$

(c) 5.2 $rads^{-1}$ (d) 6.2 $rads^{-1}$

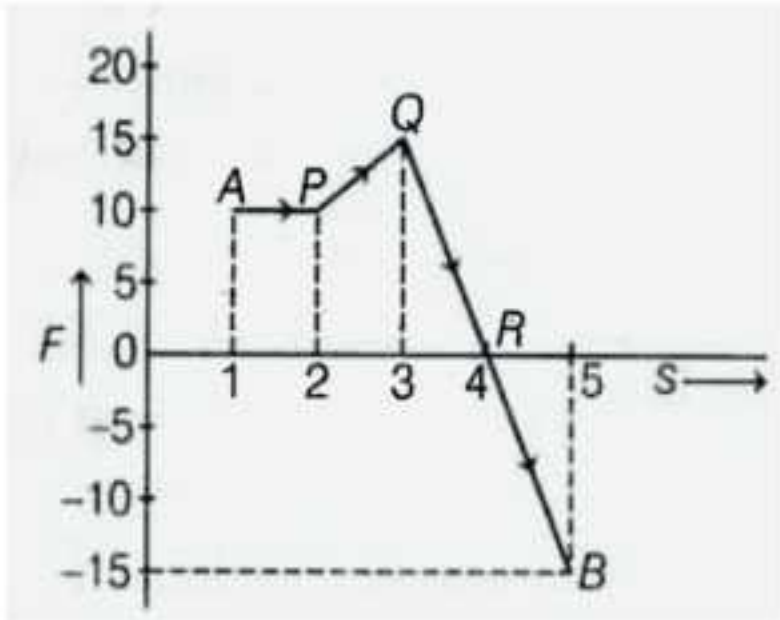
19. A hockey player is moving northward and suddenly turns westward with the same speed to avoid an opponent. The force that acts on the player is

(a) frictional force along westward (b) muscle force along southward

(c) frictional force along south-west (d) muscle force along south-west

Rough work

20. A body moves from point A to B under the action of a force varying in magnitude as shown in figure, then the work done is (force is expressed in newton and displacement in metre)



(a) 30J (b) 22.5 J

(c) 25 J (d) 27 J

21. An object of mass 10 kg is moving with velocity of 10 ms^{-1}. A force of 50 N acted upon it for 2 s. Percentage increase in its kinetic energy is

(a) 25% (b) 50%

(c) 75% (d) 300%

22. A car of mass 1000 kg moving with a speed 18 km/h on a smooth road, collide with a horizontally mounted spring of spring constant 6.25×10^3 Nm^{-1}. What is the maximum compression of the spring?

(a) 1 m (b) 2m

(c) 3m (d) 5m

Rough work

23. In a hydroelectric power station, the water is flowing at 2 ms^{-1} in the river, which is 100 m wide and 5 m deep. The maximum power output from the river is

(a) 1.5 MW (b) 2 MW

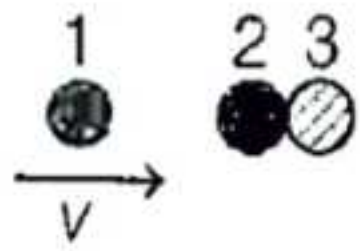
(c) 2.5 MW (d) 3 MW

24. In a collinear collision, a particle with an initial speed v_0 strikes a stationary particle of the same mass. If the final total kinetic energy is 50% greater than the original kinetic energy, the magnitude of the relative velocity between the two particles after collision, is

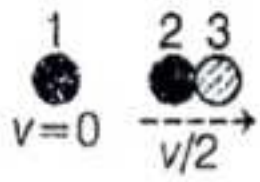
(a) $\frac{v_0}{4}$ (b) $\sqrt{2}v_0$

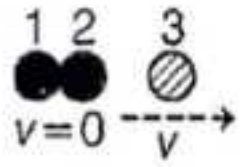
(c) $\frac{v_0}{2}$ (d) $\frac{v_0}{\sqrt{2}}$

25. Two identical balls bearing in contact with each other and resting on a frictionless table are hit head-on by another ball bearing of the same mass moving initially with a speed v.



If the collision is elastic, which of the following is a possible result after collision?

(a) ⇒ 

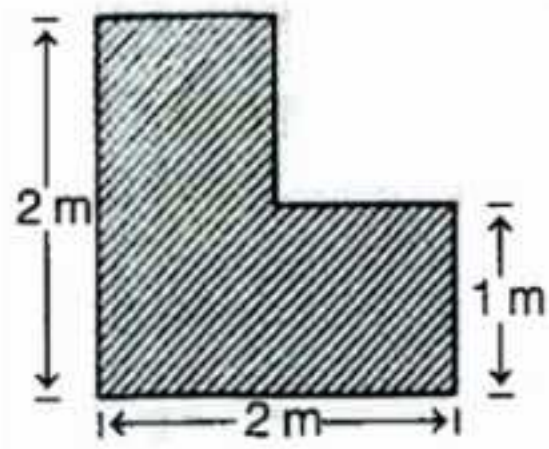
(b) ⇒ 

(c) ⇒ 

(d) None of these

Rough work

26. Find the centre of mass of a uniform L-shaped lamina (a thin flat plate) with dimensions as shown in the figure alongside. The mass of the lamina is 3 kg.



(a) (5/6) m, (5/6) m

(b) (3/4) m, (3/4) m

(c) (5/8) m, (5/8) m

(d) (3/5) m, (3/5) m

27. A bob of mass m attached to an inextensible string of length l is suspended from a vertical support. The bob rotates in a horizontal circle with an angular speed ω rads^{-1} about the vertical support. About the point of suspension,

(a) Angular momentum is conserved

(b) Angular momentum changes in magnitude but not in direction

(c) Angular momentum changes in direction but not in magnitude

(d) Angular momentum changes both in direction and magnitude

Rough work

28. An ice skater spins at $3\pi rads^{-1}$ with her arms extended. If her moment of inertia with arms folded is 75% of that with arms extended, her angular velocity when she folds her arms is

(a) π rad s^{-1} (b) 2π rad s^{-1}

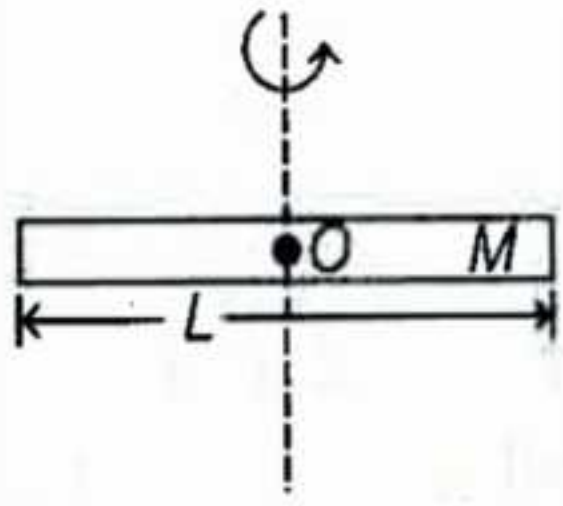
(c) 3π rad s^{-1} (d) 4π rad s^{-1}

29. A hollow cylinder and solid sphere of mass M and radius r are rotating about an axis passing through its centre. If torques of equal magnitude are applied to them, then the ratio of angular accelerations produced is

(a) $\frac{2}{5}$ (b) $\frac{5}{2}$

(c) $\frac{5}{4}$ (d) $\frac{4}{5}$

30. A rod is rotating about an axis passing through its centre and perpendicular to its length. The radius of gyration for the rod is



(a) L/12 (b) $L/\sqrt{12}$

(c) L/6 (d) $L/\sqrt{6}$

Rough work

31. How many significant figure should be present in the answer of following calculation ?

$$\frac{2^5 + (4 \times 6) - (3^2 - 1)}{5}$$

a. 2
b. 3
c. 1
d. 4

32. Mole fraction of the solute in 10.00 molal aqueous solution is

a. 0.177
b. 0.0177
c. 1.777
d. 0.153

33. 6.02×10^{20} molecules of urea are present in 50ml of its solution. The concentration of solution is

a. 0.02 M
b. 0.01 M
c. 0.001 M
d. 0.1 M

34. The empirical formula of sucrose is

a. CH_2O
b. $(CHO)_2$
c. $C_6H_{12}O_6$
d. $C_{12}H_{22}O_{11}$

35. The total number of atoms present in 8.5 gm of NH_3 is

a. 9.03×10^{23}
b. 3.01×10^{23}
c. 1.204×10^{24}
d. 6.02×10^{23}

36. Which of the following would contain the same number of atoms as 20 gm of calcium ?

a. 24 gm of Mg
b. 12 gm of carbon
c. 24 gm of carbon
d. 12 gm of Mg

37. An element X has the following isotopic composition

^{200}X = 90 %
^{199}X = 8.0 %
^{202}X = 2.0 %

The average atomic mass of naturally occurring element X is closest to

a. 199 amu
b. 200 amu
c. 201 amu
d. 202 amu

38. The total number of atomic orbital in 4th energy level of an atom is

a. 8
b. 16
c. 32
d. 4

ROUGH-WORK

39. Maximum number of electrons that can be associated with the following set of quantum number.
n=3 , l = 1 , m= −1 , s = −1/2

a. 18
b. 9
c. 2
d. 1

40. If the energy of 2 photons are in the ratio of 3:2 ,their wavelengths will be in the ratio of

a. 9 : 4
b. 4 : 9
c. 9 : 2
d. 2 : 3

41. Find the odd one :-

a. 2s
b. 2p
c. 3f
d. 4d

42. Transition metals have the general electronic configuration

a. $ns^2\ nd^{1\text{-}10}$
b. $ns^2\ np^1\ (n\text{-}1)\ d^{10}$
c. $ns^2\ (n\text{-}1)d^{10}\ np^{1\text{-}6}$
d. $ns^{1,2}\ (n\text{-}1)d^{1\text{-}10}$

43. Maximum number of elements in 3rd period is

a. 8
b. 18
c. 32
d. between 8 to 18

44. Element having configuration $[Rn]^{86}\ 7s^2\ 5f^{14}\ 6d^{10}\ 7p^5$ belongs to which family

a. Carbon family
b. Nitrogen family
c. Oxygen family
d. Halogen family

45. Correct order of Ionisation energy of C,N,O & F is

a. C < O < N < F
b. C < N < O < F
c. F < N < C < O
d. F < O < N < C

46. The percentage s-Character of the hybrid orbitals in methane, ethene and ethyne are

a. 25,33,50
b. 25,50,75
c. 70,75,80
d. 100,50,25

47. In which of the following molecules ,the central atom has 2 lone pair of electrons ?

a. SF_4
b. BrF_5
c. SO_2
d. XeF_4

ROUGH-WORK

48. Which of the following is non-polar

- **a.** H-F
- **b.** O_3
- **c.** F_2
- **d.** Au

49. Which of the following hydrogen bond is strongest?

- **a.** F – H --- F
- **b.** O – H --- O
- **c.** O – H --- F
- **d.** O–H---N

50. Which of the following will exhibit diamagnetic behaviour

- **a.** S_2
- **b.** C_2
- **c.** N_2
- **d.** O_2

51. Bond order of CO_3^{2-} is

- **a.** 1.75
- **b.** 1.25
- **c.** 1.33
- **d.** 2

52. The hybridisation of $\dot{C}F_3$ is

- **a.** sp
- **b.** sp^2
- **c.** sp^3
- **d.** not defined

53. The total number of π-bond electrons in $CH_3–CH = CH–CH_2–C \equiv C – CH = CH_2$ is

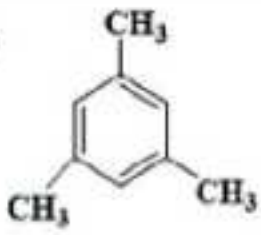
- **a.** 4
- **b.** 3
- **c.** 6
- **d.** 8

54. In $O_2 \rightarrow O_2^{2-}$,last e^- enters in

- **a.** $\pi^* 2px$
- **b.** $\pi 2px$
- **c.** $\pi^* 2py$
- **d.** $\sigma^* 2pz$

ROUGH-WORK

55.



In this structure ratio of σ to π bond is

a. 2
b. 1/2
c. 6
d. 7

56. Bond pair electrons are stronger than lone pair e⁻s because bond pair electron are

a. held by one nuclei
b. responsible for formation of σ bond
c. held by 2 nuclei
d. All are correct

57. Which of the following is correct

a. More bond order mean more state molecule.
b. More the unpaired electrons, more is diamagnetism
c. More number of electrons in antibonding orbitals more is the stability
d. None of the above

58. Electron affinity is strongest for

a. Oxygen
b. Fluorine
c. Neon
d. Beryllium

59. Number of neutrons in doubly ionized helium atom(α-particle) is

a. 2
b. 3
c. zero
d. 4

60. If 1 mole of a certain gas occupies 22.4 Ltr at standard temperature and pressure (STP),how many molecules are present in 11.2 Ltr of gas under the same conditions

a. 1.5×10^{23} molecules
b. 1.20×10^{24} molecules
c. 6.02×10^{23} molecules
d. 3.01×10^{23} molecules

ROUGH-WORK

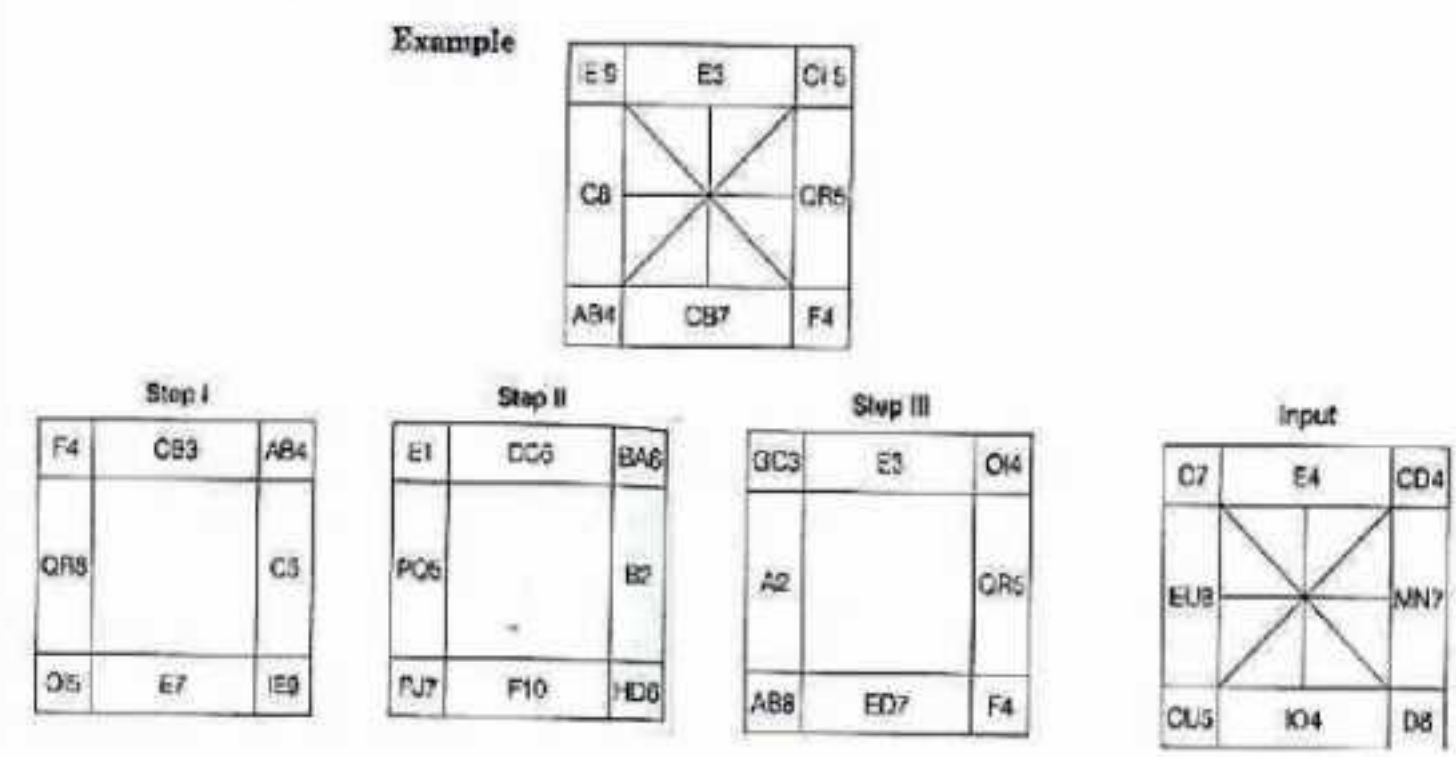
METNATL ABILITY

DIRECTIONS:(Q. Nos. 61-64) Study the following information carefully and answer the given questions.
The following is an illustration of input and rearrangement. Using the illustration answer the questions given below.

Step-I
Interchange the Alphabets/Numbers (follow the same pattern as shown in figure.)

Step-II
(a) If both letters are vowel and number is less than 6, then vowels change to next letter in English alphabetical series and add 2 to the number.
(b) If both letters are consonant and number is greater than or equal to 6, then consonants change to the previous letter in English alphabetical series and subtract 3 from the number.
(c) If both letters are vowel and number is greater than or equal to 6, then vowels change to the previous letter in English alphabetical series and subtract 3 from the number.
(d) If both letters are consonant and number is less than 6, then consonants change to next letter in English alphabetical series and add 3 to the number.
(e) If there are one vowel and one consonant, then vowel change to next letter and consonant change to the previous letter and add 2 to the number.
(f) If there is single consonant, then consonant change to the previous letter and subtract 3 from the number.
(g) If there is a single vowel, then vowel change to next letter and add 3 to the number.

Step- III
Follow both Steps I and II



61. In Step II, what is the product of the sum of numbers in the first column and the sum of numbers in the third column?
(a) 245 (b) 285 (c) 275 (d) 255

62 In Step III, what is the difference between the sum of numbers in the first row and the sum of numbers in the third row?
(a) 5 (b) 6 (c) 3 (d) 4

Rough work

63. In Step II, if the sum of the numbers in the third row is divided by the sum of numbers in the second row, then what will be the resultant?
(a) 8 (b) 7 (c) 6 (d) 2

64. In Step III, what is the sum of numbers in the first row?
(a) 15 (b) 11 (c) 12 (d) 13

65. A person lives in a far off village which is almost two hours by bus. The villager's neighbour is a very powerful landlord who is trying to occupy the poor villager's land by force.
You are the District Magistrate and busy in a meeting called by a local minister. The villager has come all the way, by bus and on foot, to see you and give an application seeking protection from the powerful landlord.
The villager keeps on waiting outside the meeting hall for an hour. You come out of the meeting and are rushing to another meeting. The villager follows you to
submit his application. What would you do?
(a) Tell him to wait for another two hours till you come back from your next meeting.
(b) Tell him that the matter is actually to be dealt by a junior officer and that he should give the application to him.
(c) Call one of your senior subordinate officers and ask him to solve the villager's problem.
(d) Quickly take the application from him, ask him a few relevant questions regarding his problem and then proceed to the meeting.

DIRECTIONS (Q. Nos.66-70): Each of the question below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statement are sufficient to answer the question.

66. Point D is in which direction with respect to Point B?
I. Point A is to the West of Point B.
Point C is to the North of Point B.
Point D is to the South of Point C.
II. Point G is to the South of Point D.
Point G is 4 m from point B.
Point D is 9 m from Point B.
III. Point A is to the West of Point B. Point B is exactly midway between Points A and E. Point F is to the South of Point E. Point D is to the West of Point F.
(a) II and III are sufficient to answer the question.
(b) I and III are sufficient to answer the question.
(c) I and II are sufficient to answer the question.
(d) All I, II, and III are required to answer the question.

Rough work

67. How many daughters does of W have?
I. B and D are the sisters of M.
II. M's father T is the husband of W.
III. Out of the three children which T has, only one is a boy.
(a) I and III are sufficient to answer the question.
(b) All I, II and III are required to answer the question.
(c) II and III are sufficient to answer the question.
(d) Question cannot be answered even with all I, II and III.

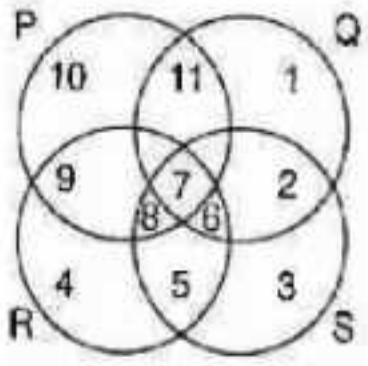
68. Who among A, B, C, D, E and F, each having a different height is the tallest?
I. B is taller than A but shorter than E.
II. Only two of them are shorter than C.
III. D is taller than only F.
(a) I and II are sufficient to answer the question.
(b) I and III are sufficient to answer the question.
(c) II and III are sufficient to answer the question.
(d) All I, II and III are required to answer the question.

69. Towards which direction is Village J from Village W?
1. Village R is to the West of Village W and to the North of Village T.
II. Village Z is to the East of Village J and to the South of Village T.
III. Village M is to the North-East of Village J and to the North of Village Z.
(a) Only III is sufficient to answer the question.
(b) II and III sufficient to answer the question.
(c) Question cannot be answered even with all I, II and III.
(d) None of the above

70. How is 'go' written in a code language?
I. 'now or never again' is written as 'torn ka na sa' in that code language.
II. 'you come again now' is written as 'ja ka ta sa' in that code language..
III. 'again go now or never' is written as 'na ha ka sa torn' in that code language.
(a) I and III are sufficient to answer the question.
(b) II and III are sufficient to answer the question.
(c) I and II are sufficient to answer the question.
(d) All I, II and III are required to answer the question.

Rough work

71.



In the above diagram, circle P represents hardworking people, circle Q represents intelligent people, circle R represents truthful people and circle S represents honest people. Which region represents the people who are intelligent, honest and truthful but not hardworking?

(a) 6 (b) 7 (c) 8 (d) 11

DIRECTIONS:(Q. Nos. 72-74) In the following questions, the symbols @, $, * # and δ are used with the following meaning as illustrated below.

P $ Q' means, 'P is not smaller than Q.

'P@ Q' means, 'P is neither smaller than nor equal to Q'.

'P# Q' means, 'P is neither greater than nor equal to Q.

'PδQ' means, 'P is neither greater than nor smaller than Q.'

'P *Q' means, 'P is not greater than Q.

Now, in each of the following questions assuming the given statements to be true, find which of the four Conclusions I, II, III and IV given below them is/are definitely true and give your answer accordingly.

72. **Statements** H@T, T#F, F δ E, E * V

Conclusions I. V $ F II. E@T

III. H@V IV. T#V

(a) I, II and III are true. (b) I, Il and IV are true.

(c) II, III and IV are true. (d) I, III and IV are true.

73. **Statements** D#R, R * K, K@ F, F$J

Conclusions I. J # R II. J#K

III. R#F IV.K@D

(a) I, Il and III are true (b) II, Ill and IV are true

(c) I, III and IV are true (d) None of these

74. **Statements** Nδ B, B$ W, W # H, H * M

Conclusions I M@W II.H@N

III. WδN IV. W#N

(a) Only I is true. (b) Only Ill is true.

(c) Either III or IV is true... (d) Either III or IV and I are true.

Rough work

DIRECTIONS (Q. Nos. 75): In this question, a relationship between different elements is shown in the statements. The statements are followed by two conclusions.

75. **Statements** $L \leq T \leq I \geq M < X, W < P \leq L \geq B \geq K$
Conclusions I. $K < X$ II. $W > M$
(a) If only Conclusion II is true
(b) If only Conclusion I is true
(c) If neither Conclusion I nor II is true
(d) If either Conclusion I or II is true

76. **In the following question, which number/character will complete the given pattern, when placed at the sign of interrogation (?)**

K7	L4	M10
L8	M5	K12
M9	L6	?

(a) K24 (b) L14 (c) K14 (d) M14

77. **The difference between the ages of two brothers is same as the difference between the ages of their parents. The age of elder brother is 15 yr. At the time of the birth of younger brother their mother's age is 37 yr. If father's age is 5 yr more than mother's age, then what was the age of father at the time of elder brother's birth?**
(a) 32 yr (b) 57 yr (c) 25 yr (d) None of these

78. **A survey of 500 TV viewers produced the following information. 285 viewers watch football games, 195 viewers watch hockey games, 115 viewers watch basketball game, 45 viewers watch football and basketball games, 70 viewers watch football and hockey games 50 viewers watch hockey and basketball games and 50 viewers do not watch any of three games. How many viewers watch exactly one of the three games?**
(a) 440 (b) 365 (c) 205 (d) 325

DIRECTIONS (Q. Nos. 79): In the following question two rows of numbers are given. The resultant number in each row is to be worked out separately based on the following rules and the questions below the rows of numbers are to be answered. The operations of numbers progress from left to right.
Rules
(i) If a two-digit odd number is followed by a two-digit odd number, they are to be added.
(ii) If a two-digit even number is followed by a two digit odd number which is a perfect square, then even number is to be subtracted from the odd number.
(iii) If a three-digit number is followed by a two-digit number, the first number is to be divided by then second number.
(iv) If a prime number is followed by an even number, the two are to be added.
(v) If an even number is followed by an another, even number, the two are to be multiplied.

Rough work

79. 345 23 X
45 17 81
If X' is the resultant of the second row, what is the resultant of the first row?
(a) 285 (b) 33 (c) 135 (d) 34

80. If 64 + 7 = 460 and 25 + 8 = 212, then 43 + 8 = ?
(a) 360 (b) 376 (c) 332 (d) 356

81. The day on 18.09.1977 was Sunday. A couple was married on this date. How many marriage anniversaries of this couple would fall on Sunday in the next 15 yr?
(a) 1 (b) 2 (c) 5 (d) 9

82. A watch is one minute slow at 1: 00 pm on Tuesday and 2 min fast at 1: 00 pm on Thursday. When did it show the correct time?
(a) 1: 00 am on Wednesday (b) 5: 00 am on Wednesday
(c) 1: 00 pm on Wednesday (d) 5: 00 pm on Wednesday

DIRECTIONS (Q. Nos. 83-84): Study the given information carefully to answer the given questions.
Ten people G, H, I, J, K, L, W, X, Y and Z live in a building with four floors. Each floor has 3 flats-flat 1, flat 2, and flat 3 in the same order from left to right. Ground floor is numbered floor 1 and top most floor is floor 4. Each flat is built in such a way that Flat 1 of floor 2 is just above Flat 1
of floor 1 and so on. The two flats in which no one lives are on even numbered floor and in even numbered flat respectively. G does not live on even numbered floor and even numbered flat. W lives in the flat which is just above H's flat.
The only flat which is between K and X is vacant and K lives in one of the flat above X.L lives in an odd numbered flat which is in the left of X on the same floor. Z and Y lives on the same floor and no one else is living with them on that floor. G lives on a floor and flat just above W's floor and flat. I live on one of the floor on which one flat is vacant. Z and I both live in the flat which is numbered 1.

83. Who is living just above X?
(a) K (b) G (c) J (d) None

84. Which of the following statement is true about G?
(a) G lives on an even numbered flat.
(b) K is the immediate neighbour of G
(c) G lives on a floor on which one flat is vacant
(d) None is true

DIRECTIONS(Q. Nos. 85-86): Study the information carefully and answer the questions given below.
There are ten persons J, P, Q, R, S, T, G, U, V and X living in a ten-floor building, such that ground floor is numbered as 1, just above the floor is numbered as 2 and so on the topmost floor is numbered as 10, but not necessary in the same order. P lives on the 5th floor. Only three persons live between P
and V. T lives immediate above J, who lives on an odd numbered floor. S lives on one of the floors below R.

Rough work

Number of persons lives between J and P is same as number of persons lives between T and R. There is only one floor in between U and X. W lives on an odd numbered floor. R does not live on top floor. S lives on an odd numbered floor above X but not on seventh floor. V lives below the floor on which P lives. U lives above the floor on which X lives. Q lives on an even numbered floor above P but not on top floor.

85. **Four of the following five are alike in certain way based form a group, find the one which does not belong to that group?**
(a) Q (b) X (c) U (d) W

86. **Which of the following statement is not true about U?**
(a) U lives on 4th floor (b) Two persons live between U and W
(c) V lives immediate below U (d) P lives immediate above U

DIRECTIONS(Q. Nos. 87): Read the following information and answer the question that follow:
Six students A, B, C, D, E and F appeared in several tests. Either C or F scores the highest.
Whenever C scores the highest, then E scores the least. Whenever F scores the highest, B scores the least.
In all the tests they got different marks : D scores higher than A, but they are close competitors; A scores higher than B; C scores higher than A.

87. **If E is ranked third, then which one of the following is correct?**
(a) E gets more marks than C (b) C gets more marks than E
(c) A is ranked fourth (d) D is ranked fifth

88. **Mohan correctly remembers that his father's birthday is before 20th January but after 16th January whereas his sister correctly remembers that their father's birthday is after 18th January but before 23rd January. On which date in January is definitely their father's birthday?**
(a) 18th (b) 19th (c) 20th (d) Data inadequate

DIRECTIONS(Q. Nos. 89): Read the information carefully and answer the following question.
If 'A+ B' means 'A is the father of B'.
If 'A × B' means 'A is the sister of B'.
If 'A $ B' means 'A is the wife of B'.
If 'A % B' means 'À is the mother of B'.
If 'A÷ B' means 'A is the son of B'

89. **Which among the following options is true, if the expression I + T % J ×L ÷ K' is definitely true?**
(a) L is the daughter of T. (b) K is the son-in-law of I.
(c) I is the grandmother of L.. (d) J is the brother of L.

Rough work

DIRECTIONS (Q. Nos. 91) In the following question, the symbols #, &, @ and $ are used with the following meaning as illustrated below. Study the following information and answer the given questions.

Note The directions which are given indicates exact directions.

P#Q - P is in the South direction of Q.

P@Q - P is in the North direction of Q.

P&Q - P is in the East direction of Q

P$Q - P is in the West direction of Q.

P£QS - P is the mid-point of QS vertically.

Note For South-East direction it used to be written as P#&Q and so on ....

When it is given that the Car honks once then it will be considered as the car taken a left turn and if it is given as the car honks twice then it will be considered as the car takes a right turn.

Point S is & 15 m of Point B. Point J is @ 33 m of Point S.

Point K is @ 25 m of Point B. Point L is $20 m of Point K.

Point Q is #40 m of Point L. Point F is &40 m Point Q. Point E £ DF. Point D is @30 m of Point F.

90. What could the possible shortest route to reach Point K from Point J?

(a) Started in East till 15 m, honks once, cover 8 m

(b) Started in West till 15 m, honks twice, cover 8 m

(c) Started in South till 25 m, honks once, cover 8 m

(d) Started in West till 15 m, honks once, cover 8 m

91. In The following question, arrange the given words in meaningful sequence and choose the correct sequence from the given alternatives.

1. Kilobyte 2. Byte 3. Megabyte 4. Terabyte 5. Gigabyte 6. Bit

Give your answer from the following codes

(a) 6, 2, 1, 3, 5, 4 (b) 6, 2, 1, 4, 3, 5 (c) 6, 2, 1, 3, 4, 5 (d) 6, 2, 1, 4, 5, 3

92. What comes in place of question (?) in the series given below?

ABD, DGK, HMS, MTB, SBL ?

(a) ZKW (b) KZU (c) ZKU (d) ZCA

Rough work

93. In the following question, a word is represented by only one set of numbers as given in anyone of the alternatives. The set of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix I are numbered 0 to 4 and that of Matrix II are numbered 5 to 9. A letter from these matrices can be represented first by its row and then by its column, example, P can be represented by 55,69 etc. and L can be represented by 59, 68 etc. Similarly, you have to identify the set for the word given in the question.

MASTER

Matrix-I

	0	1	2	3	4
0	S	M	A	R	T
1	M	A	R	T	S
2	A	R	T	S	M
3	R	T	S	M	A
4	T	S	M	A	R

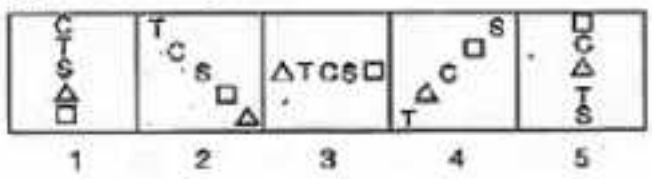
Matrix-II

	5	6	7	8	9
5	P	E	R	I	L
6	E	R	I	L	P
7	R	I	L	P	E
8	I	L	P	E	R
9	L	P	E	R	I

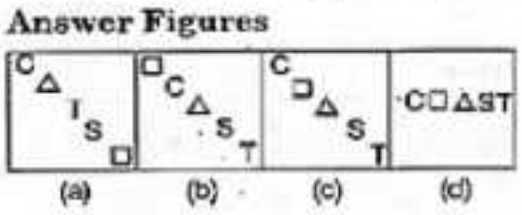
(a) 01, 11, 23, 00, 88, 44
(b) 10, 34, 14, 31, 40, 12
(c) 01, 43, 41, 04, 65, 44
(d) 33, 02, 23, 30, 31, 97

94. In the following question, which one of the four answer figure will come after the question figures on the right end. If the sequence is continued.

Question Figures

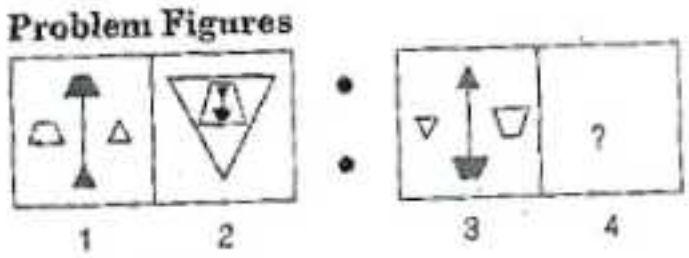


Answer Figures

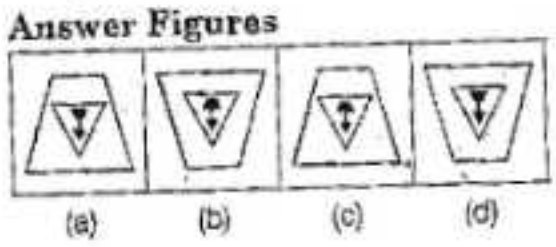


DIRECTION(Q. Nos. 95): The second figure in the first pair of the problem figure bears a certain relationship with the first figure. Similarly, one of the answer figures bears the same relationship with the first figure in the second pair of the problem figure. You have to select that figure from the set of answer figures which will replace the question mark (?)

95. **Problem Figures**

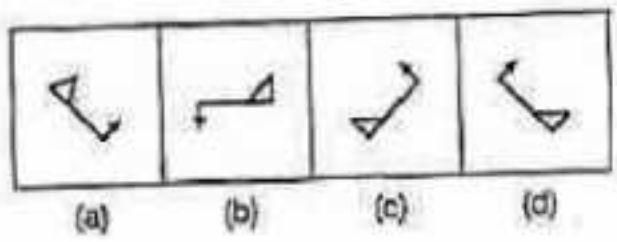


Answer Figures

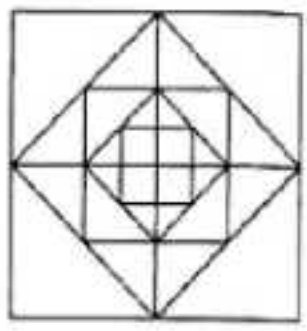


Rough work

96. In the following question, four figures are given. Three are similar in a certain way and form a group. Find out which one of the figure does not belong to that group.

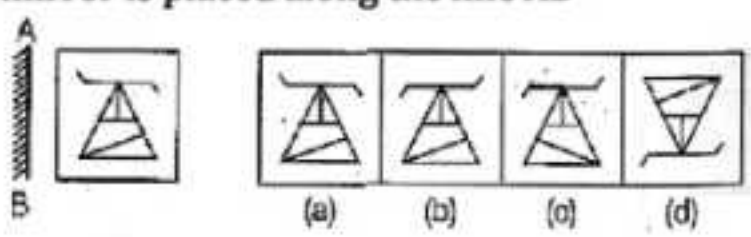


97. Count the number of squares in the given figures?

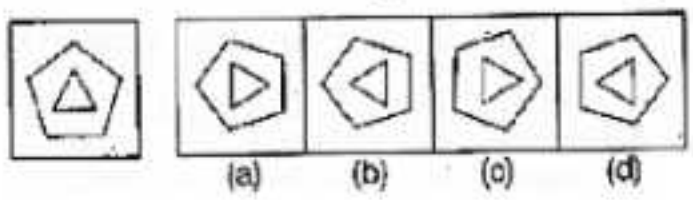


(a) 12 (b) 13 (c) 16 (d) 17

98. In the following question, choose the correct mirror image from the alternatives (a), (b), (c) and (d), when mirror is placed along the line AB

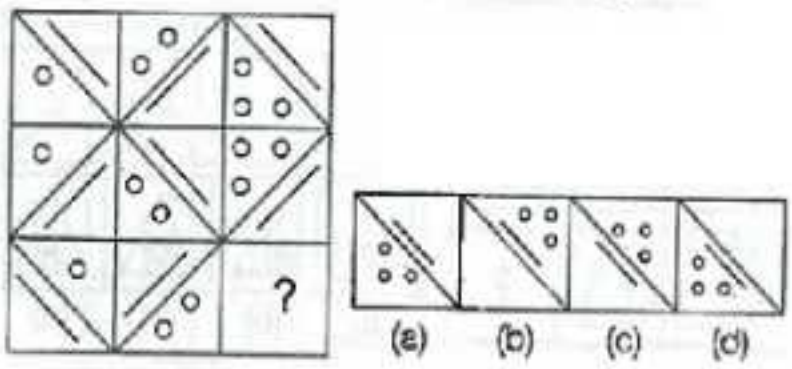


99. In the given figure, the pentagon is rotated 270° clockwise and the triangle is rotated 270° anti-clockwise and then the water image of the new figure is taken, what will be the final figure.



100. In the following question, find out the answer figure which completes the question figure matrix.

Question Figure **Answer Figures**



Rough work

ANSWER KEY

Q.NO	PHYSICS	Q.NO	CHEMISTRY	Q.NO	MAT	Q.NO	MAT
1	B	31	B	61	D	91	A
2	A	32	D	62	C	92	A
3	D	33	A	63	D	93	C
4	B	34	D	64	D	94	C
5	A	35	C	65	D	95	C
6	C	36	D	66	B	96	B
7	B	37	B	67	C	97	D
8	A	38	B	68	A	98	C
9	C	39	D	69	D	99	A
10	C	40	D	70	A	100	C
11	C	41	C	71	A		
12	D	42	D	72	B		
13	C	43	A	73	D		
14	C	44	D	74	D		
15	B	45	A	75	C		
16	A	46	A	76	C		
17	A	47	D	77	D		
18	B	48	C	78	D		
19	C	49	A	79	D		
20	B	50	C	80	D		
21	D	51	C	81	B		
22	B	52	C	82	B		
23	B	53	D	83	D		
24	B	54	C	84	B		
25	B	55	D	85	D		
26	A	56	C	86	C		
27	C	57	A	87	B		
28	D	58	B	88	B		
29	A	59	A	89	B		
30	B	60	D	90	D		

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Answer Key Available	Answer Key Challenge	Result Declaration TOP 10 (Class Wise)	Prize Distribution Function	Result Declaration of all Participants
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(1). Your Name (2) Roll Number (3) School Name (4) Mobile Number (5) Specific Question(s) being challenged

Your challenge will be reviewed accordingly.

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