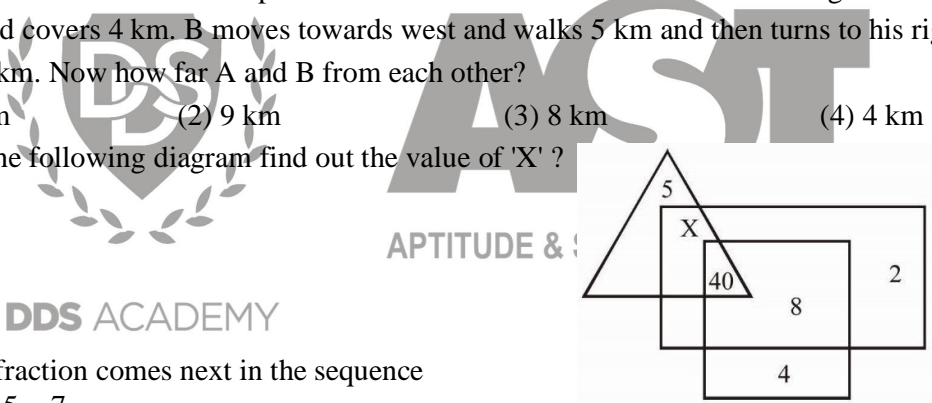


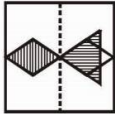


**SECTION – I (Logical reasoning)**

- Select the one which is different from others.  
 (1) Book (2) Paper (3) Pencil (4) Pen
- If 'DATE' is coded as 'EBUF' how will you code " BRASS"?  
 (1) CSBTT (2) RQATB (3) CSBTA (4) CBATR
- If 'tee see pee' mean 'Drink fruit juice' 'See kee lee' means 'juice is sweet' and 'lee ree mee' means 'He is intelligent' which word in that language means 'Sweet' ?  
 (1) See (2) Kee (3) lee (4) Pee
- A and B started from a fixed place. A moves towards North and after walking 3 km turns to his right and covers 4 km. B moves towards west and walks 5 km and then turns to his right and walk 3 km. Now how far A and B from each other?  
 (1) 5 km (2) 9 km (3) 8 km (4) 4 km
- Study the following diagram find out the value of 'X' ?  
 (1) 36  
 (2) 29  
 (3) 10  
 (4) 28
- Which fraction comes next in the sequence  
 $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}$   
 (1)  $\frac{9}{32}$ , (2)  $\frac{10}{17}$  (3)  $\frac{11}{34}$  (4)  $\frac{12}{35}$
- A figure marked as transparent sheet is given and followed by four answer figures. One out of these four options resembles the figure which is obtained by folding transparent sheet along the dotted line. This option is your answer.



**Transparent Sheet**



**Answer Figures**

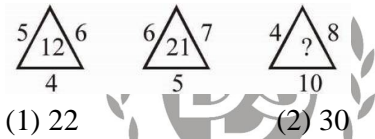
- (1) (2) (3) (4)

Space For Rough Work

8. In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts in all 60 questions and secures 130 marks, the number of questions he attempts correctly, is –  
 (1) 35 (2) 38 (3) 40 (4) 42
9. Engineer is related to Machine in the same way as Doctor is related to –  
 (1) Hospital (2) Body (3) Disease (4) Medicine

**DIRECTIONS (Qs. 10 to 12) :** In each group there is some relationship. Try to understand that relationship and select correct answer.

10.



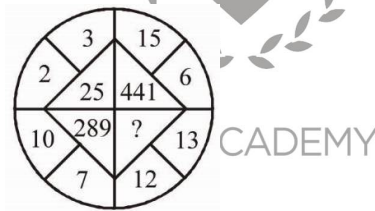
(1) 22

(2) 30

(3) 32

(4) None of these

11.



(1) 25

(2) 125

(3) 156

(4) 625

12.

A2	C4	E6
G3	I5	?
M5	O9	Q14

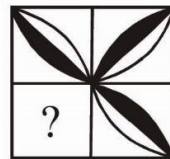
(1) J15

(2) K8

(3) K15

(4) L10

13. Select from alternatives the figure (X) that exactly fits in the main figure to complete its original pattern.



(X)



Space For Rough Work

14. Which of the following meanings of the arithmetical signs will yield the value 'zero' for the expression given below–

$$200 \times 100 + 300 \times 200 - 10 \div 2 + 40$$

- (1) + means –, – means  $\times$ ,  $\times$  means  $\div$ ,  $\div$  means +  
 (2) + means –, – means  $\div$ ,  $\times$  means +,  $\div$  means  $\times$   
 (3) + means  $\times$ , – means –,  $\times$  means  $\div$ ,  $\div$  means +  
 (4) + means  $\div$ , – means +,  $\times$  means –,  $\div$  means  $\times$

**DIRECTIONS (Qs.15) :** Find out the missing number.

15. 13, 35, 57, 79, 911, ?

- (1) 1110 (2) 1112 (3) 1113 (4) 1315

**SECTION – II (Verbal Reasoning)**

**DIRECTIONS (Qs. 16-23) :**

In the following passage there are some numbered blanks. Fill in the blanks by selecting the most appropriate word for each blank from the given options. Many parents greet their children's teenage years with needless dread. While teens (16) assault use with heavy-metal music, (17) outlandish clothes and spend all (18) time with friends, such behaviour always adds upto full-scale revolt. Teenage (19), according to psychologist. Laurence Steinberg, has been (20) exaggerated. Sociologist Sanford Dornbusch agrees. "The idea that teenagers inevitably rebel is a (21) that has the potential for great family (22)," says Dornbusch. He believes the notion can (23) communication during this critical time for parents to influence youngsters.

16. (1) can (2) must (3) may (4) should  
 17. (1) show (2) dress (3) put (4) flaunt  
 18. (1) her (2) his (3) their (4) our  
 19. (1) rebellion (2) subversion (3) mania (4) revolution  
 20. (1) always (2) never (3) greatly (4) hardly  
 21. (1) myth (2) story (3) fact (4) reality  
 22. (1) ruin (2) downfall (3) harm (4) defeat  
 23. (1) destroy (2) suffocate (3) damage (4) injure

Space For Rough Work

**DIRECTIONS (Qs. 24-27) :**

Select the most appropriate option to fill in the blanks from the given alternatives.

24. It is earth's gravity which \_\_\_\_\_ people their weight.  
 (1) gives (2) give (3) giving (4) given
25. Capitalist society \_\_\_\_\_ profit as a valued goal.  
 (1) which regards (2) regarding (3) regards (4) was regarded
26. The impact of two vehicles can cause a lot of \_\_\_\_\_ to both.  
 (1) damage (2) damages (3) damaging (4) damagings
27. He is ..... tennis.  
 (1) fond to play (2) fond of playing (3) fond in playing (4) fond at playing

**DIRECTIONS (Qs. 28-30) :**

Select the word which means the opposite of the given word.

28. PROFANE  
 (1) Sacred (b) Artless (3) Rigid (4) Aspersion
29. OBLIGATORY  
 (1) Doubtful (2) Voluntary (3) Sincerely (4) Faithfully
30. OBSCURE  
 (1) Suitable (2) Apt (3) Thalamus (4) Clear

**SECTION – III (Mathematics)**

31. If  $112 = q \times 6 + r$ , then the possible values of  $r$  are:  
 (1) 1, 2, 3, 4 (2) 0, 1, 2, 3, 4, 5 (3) 0, 1, 2, 3 (4) 2, 3, 5
32. If  $\frac{32}{500} = \frac{32}{(2)^2 \times (5)^m}$  then the value of  $m$  is  
 (1) 2 (2) 3 (3) 4 (4) 5
33. If two positive integers  $a$  and  $b$  are written as  $a = x^3y^2$  and  $b = xy^3$ ;  $x, y$  are prime numbers, then HCF ( $a, b$ ) is  
 (1)  $xy$  (2)  $xy^2$  (3)  $x^3y^3$  (4)  $x^2y^2$
34. If  $x = 2 + 2^{1/3} + 2^{2/3}$  then value of  $x^3 - 6x^2 + 6x - 2$  is  
 (1) 0 (2) 1 (3) -1 (4) 3

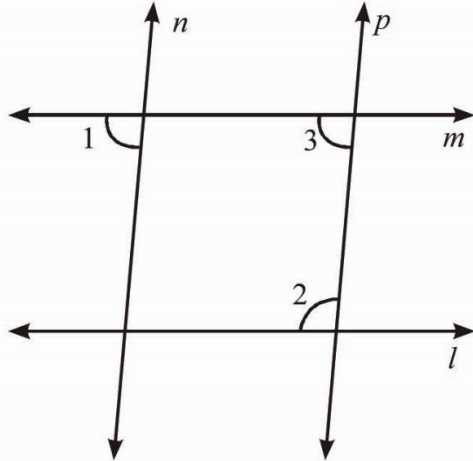
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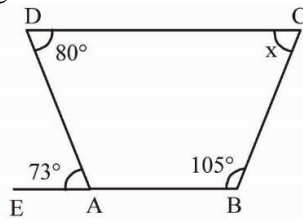
35. Value of  $0.645 \times 0.645 + 2 \times 0.645 \times 0.355 + 0.355 \times 0.355$  is  
 (1) 1 (2) 2 (3) 3 (4) 4

36. In figure if  $l \parallel m, n \parallel p$ , and  $\angle 1 = 85^\circ$ , then  $\angle 2$  is.

- (1)  $85^\circ$  (2)  $95^\circ$   
 (3)  $180^\circ$  (4)  $75^\circ$



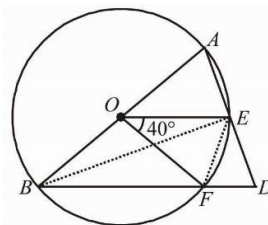
37. The angles of a quadrilaterals are in the ratio 3 : 5 : 9 : 13. All the angles of the quadrilaterals are.  
 (1)  $36^\circ, 60^\circ, 108^\circ, 156^\circ$  (2)  $30^\circ, 50^\circ, 90^\circ, 130^\circ$   
 (3)  $39^\circ, 65^\circ, 117^\circ, 169^\circ$  (4)  $30^\circ, 65^\circ, 100^\circ, 150^\circ$
38. Use the information given in figure to choose the correct value of  $x$ .



- (1)  $x = 86^\circ$  (2)  $x = 60^\circ$  (3)  $x = 68^\circ$  (4)  $x = 107^\circ$

39. In the given figure,  $O$  is the centre of a circle and  $AB$  is a diameter. If  $\angle EOF = 40^\circ$ , then  $\angle EDF$  is

- (1)  $70^\circ$   
 (2)  $45^\circ$   
 (3)  $90^\circ$   
 (4)  $180^\circ$



Space For Rough Work

40. A cone and cylinder are having the same base. The ratio of their heights if their volumes are equal is  
 (1) 1 : 3 (2) 3 : 1 (3) 1 : 2 (4) 2 : 1
41. A park, in the shape of a quadrilateral  $ABCD$ , has  $\angle C = 90^\circ$ ,  $AB = 9$  m,  $BC = 12$  m,  $CD = 5$  m, and  $AD = 8$  m. How much area does it occupy?  
 (1)  $30 \text{ m}^2$  (2)  $13 \text{ m}^2$  (3)  $169 \text{ m}^2$  (4)  $12 \text{ m}^2$
42. Water in a canal, 30 dm wide and 12 dm deep, is flowing with a velocity of 20 km per hour. How much area will it irrigate in 30 min, if 9 cm of standing water is desired?  
 (1)  $36,000 \text{ m}^2$  (2)  $10,000 \text{ m}^2$  (3)  $4,00,000 \text{ m}^2$  (4)  $40,000 \text{ m}^2$
43. The monthly salaries (in ₹) of 10 employees of a factory are:  
 12000, 8500, 9200, 7400, 11300, 12700, 7800, 11500, 10320, 8100. The median salary is  
 (1) ₹ 9670 (2) ₹ 9760 (3) ₹ 6970 (4) ₹ 7960
44. One hundred cards are numbered from 1 to 100. The probability that a card chosen at random has the digit 5 is  
 (1)  $\frac{19}{100}$  (2)  $\frac{100}{19}$  (3)  $\frac{10}{100}$  (4)  $\frac{5}{100}$
45. If two zeros of the polynomial  $f(x) = x^3 - 4x^2 - 3x + 12$  are  $\sqrt{3}$  and  $-\sqrt{3}$ , then its third zero is  
 (1) 4 (2) -4 (3) 3 (4) -3
46. Solve :  
 $x + 2y + z = 7$   
 $x + 3z = 11$   
 $2x - 3y = 1$   
 Values of  $x$ ,  $y$  and  $z$  are respectively  
 (1)  $x = 1, y = 2, z = 3$  (2)  $x = 2, y = 3, z = 1$  (3)  $x = 2, y = 1, z = 3$  (4)  $x = 3, y = 2, z = 1$
47. The hypotenuse of a grassy land in the shape of a right triangle is 1 metre more than twice the shortest side. If the third side is 7 metres more than the shortest side, The sides of the grassy land are  
 (1) 8 m, 17 m, 15 m (2) 2 m, 16 m, 13 m  
 (3) 10 m, 4 m, 5 m (4) 7 m, 10 m, 14 m
48. Two A.P's have the same common difference. The difference between their 100th terms is 111 222 333. What is the difference between their Millionth terms?  
 (1) 111 222 333 (2) 222 111 333 (3) 333 111 222 (4) 111 333 222

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Space For Rough Work

49. Value of  $\theta$ , if  $\sin(\theta + 36^\circ) = \cos\theta$ , where  $\theta + 36^\circ$  is an acute angle, is  
 (1)  $90^\circ$  (2)  $36^\circ$  (3)  $54^\circ$  (4)  $27^\circ$
50. A vertical tower stands on a horizontal plane and is surmounted by a vertical flag staff of height 6 meters. At point on the plane, the angle of elevation of the bottom and the top of the flag staff are respectively  $30^\circ$  and  $60^\circ$ . The height of tower is  
 (1) 2 m (2) 5 m (3) 2.5 m (4) 3 m
51. The coefficient of  $x^2$  in  $(x^2 - 1)(x^2 + x - 6)$  is  
 (1) 5 (2) -5 (3) 7 (4) -7
52. If a point  $C$  lies between two points  $A$  and  $B$  such that  $AC = BC$ , then  $AB$  is equal to  
 (1)  $2AC$  (2)  $3AC$  (3)  $4AC$  (4)  $AC$
53. If the system of equations  $3x + y = 1$   $(2k - 1)x + (k - 1)y = 2k + 1$  is inconsistent, then  $k =$   
 (1) 1 (2) -1 (3) -2 (4) 2
54. The sum of first 24 terms of the sequence whose  $n$ th term is given by  
 $a_n = 3 + \frac{2n}{3}$  is  
 (1) 278 (2) 272 (3) 270 (4) 268
55. Sides of two similar triangles are in the ratio of 4 : 9. Areas of these triangles are in the ratio of  
 (1) 2 : 3 (2) 4 : 9 (3) 81 : 16 (4) 16 : 81

**SECTION – IV (Science)**

56. Consider the following statements regarding the living cell:  
 (a) The Golgi apparatus links carbohydrates with proteins to form glycoproteins.  
 (b) In plants, the Golgi complex synthesizes pectin.  
 (c) The lysosomes store the hydrolysing enzymes.  
 Which of these statement(s) is/are correct ?  
 (1) Only (a) and (b) (2) Only (b) (3) Only (c) (4) (a), (b) and (c)
57. Which among the following statements are true for unisexual flowers?  
 (a) They possess both stamen and pistil.  
 (b) They possess either stamen or pistil.  
 (c) They exhibit cross-pollination.  
 (d) Unisexual flowers possessing only stamens cannot produce fruits.  
 (1) (a) and (d) (2) (b), (c) and (d) (3) (c) and (d) (4) (a), (c) and (d)

Space For Rough Work



58. Match column-I with column-II and select the correct answer using the codes given below :

Column I                      Column II

- (A) Cyton                      (p) The body of the nerve cell that contains the organelles.  
 (B) Dendrite                (q) Receives the stimuli sent from another nerve or the outside environment.  
 (C) Axon                      (r) The long, thin section of the nerve cell where the impulse is transmitted across.  
 (D) Myelin sheath        (s) A fatty substance that covers the axon of the nerve cell.

- (1) (A) → p, (B) → q, (C) → r, (D) → s              (2) (A) → q, (B) → p, (C) → r, (D) → s  
 (3) (A) → r, (B) → s, (C) → p, (D) → q              (4) (A) → s, (B) → r, (C) → p, (D) → q

59. Match column-I with column-II and select the correct answer using the codes given below :

Column I                      Column II

- (A) Duodenum                (p) Opening of wind pipe  
 (B) Epiglottis                (q) Small wind sac  
 (C) Caecum                    (r) A cartilaginous flap  
 (D) Glottis                    (s) 'V' shaped structure emerging from the stomach

- (1) (A) → s, (B) → r, (C) → q, (D) → p              (2) (A) → p, (B) → q, (C) → r, (D) → s  
 (3) (A) → s, (B) → q, (C) → r, (D) → p              (4) (A) → s, (B) → r, (C) → p, (D) → q

60. On the basis of following features identify correct option.

I. It is the type of fishery practised in small water bodies where fish is first reared and then harvested.

II. It depends upon topography, water resource, particle size and nutrients.

III. It is integrated with agriculture in paddy cum fish culture.

- (1) Fin fishery                (2) Shell fishery              (3) Capture fishery              (4) Culture fishery

61. It is said, the Tajmahal may be destroyed due to

- (1) flood in Yamuna river.  
 (2) decomposition of marble as a result of high temperature.  
 (3) air pollutants released from oil refinery of Mathura.  
 (4) All of the above

62. Consider the following statements:

- (a) In the animals of phylum Porifera, called sponges, the reproduction is only asexual by budding.  
 (b) Many forms of Coelenterata possess a hard exoskeleton of lime to form corals.  
 (c) In the animals of phylum Echinodermata, body surface is covered all over by calcareous spines.

Which of the above statement(s) is/are not correct?

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

Space For Rough Work

63. Consider the following statements:  
 (a) Molecular mass of  $\text{CH}_3\text{OH}$  is 32 u.      (b) In  $\text{NH}_3$ , the ratio of N and H by mass is 14 : 3.  
 (c) The formula weight of  $\text{CaCl}_2$  is 111 u.      (d) Isotopes have same atomic mass.  
 Which of the above statements are correct?  
 (1) (a) and (c)      (2) (a), (b) and (d)      (3) (a), (b) and (c)      (4) (a), (c) and (d)
64. A teacher instructed four students A, B, C and D to prepare a suspension of chalk in water. The students prepared suspension in the following manner:  
 student 'A' places a piece of chalk in water.  
 student 'B' places powdered chalk in water.  
 student 'C' places powdered chalk in water and then shakes the mixture vigorously.  
 student 'D' places powdered chalk in dil. HCl.  
 Which of the following students has correct way of preparation of suspension?  
 (1) Student A      (2) Student B      (3) Student C      (4) Student D
65. Match column-I with column-II and select the correct answer using the codes given below :
- | Column I             | Column II        |
|----------------------|------------------|
| (A) $\text{CuFeS}_2$ | (p) Distillation |
| (B) $\text{ZnCO}_3$  | (q) Liqutation   |
| (C) Tin              | (r) Calcination  |
| (D) Mercury          | (s) Roasting     |
- (1) A-(p), B-(q), C-(r), D-(s)      (2) A-(q), B-(r), C-(s), D-(p)  
 (3) A-(s), B-(r), C-(q), D-(p)      (4) A-(r), B-(s), C-(q), D-(p)
66. Consider the isotopes of chlorine :  $_{17}\text{Cl}^{35}$ ,  $_{17}\text{Cl}^{37}$   
 Atomic masses of these isotopes are different, while their chemical properties are same. In the Mendeleev's periodic table, isotopes of chlorine was placed:  
 (1) In the different groups      (2) In the same group  
 (3) In different periods      (4) Both (1) and (3) are correct
67. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing anhydrous calcium chloride. The role of anhydrous calcium chloride taken in the guard tube is to  
 (1) absorb the evolved gas      (2) moister the gas  
 (3) absorb moisture from the gas      (4) absorb  $\text{Cl}^-$  ions from the evolved gas

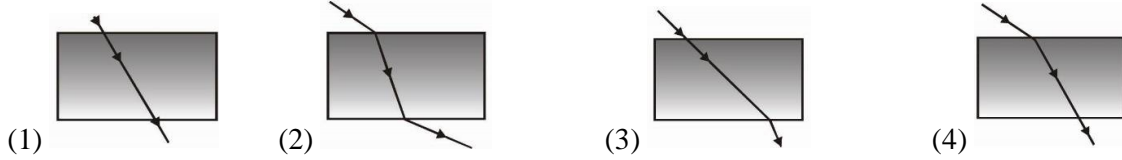
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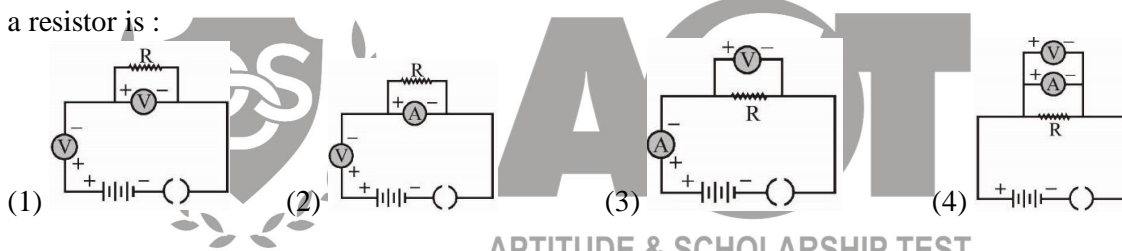
68. Which of the following gases can be used for storage of fresh sample of an oil for a long time?  
 (1) Carbon dioxide or oxygen (2) Nitrogen or oxygen  
 (3) Carbon dioxide or helium (4) Helium or nitrogen
69. On the basis of following features identify the correct option  
 I. This metal is not obtained in free state.  
 II. This metal is obtained by electrolysis of their chlorides in molten state.  
 (1) Na (2) Ca (3) Both (I) and (II) (4) Neither (I) nor (II)
70. Match column-I with column-II and select the correct answer using the codes given below :
- | Column I         | Column II                    |
|------------------|------------------------------|
| (A) Carbon       | (p) Unsaturated hydrocarbons |
| (B) $C_nH_{2n}$  | (q) Conductor of electricity |
| (C) Graphite     | (r) Allotropy                |
| (D) Ethylalcohol | (s) Fermentation of molasses |
- (1) (A)-p, (B)-r, (C)-q, (D)-s (2) (A)-r, (B)-p, (C)-q, (D)-s  
 (3) (A)-r, (B)-q, (C)-p, (D)-s (4) (A)-r, (B)-p, (C)-s, (D)-q
71. Which of the following is correct order of density?  
 (1) Air < Exhaust from chimneys < Honey < Water < Chalk < Cotton < Iron  
 (2) Air < Exhaust from chimneys < Water < Honey < Cotton < Chalk < Iron  
 (3) Air < Exhaust from chimneys < Honey < Water < Chalk < Iron < Cotton  
 (4) Air < Exhaust from chimneys < Water < Honey < Chalk < Cotton < Iron
72. Match column-I with column-II and select the correct answer using the codes given below :
- | Column I              | Column II                    |
|-----------------------|------------------------------|
| (A) Falling mass      | (p) Use of KWh               |
| (B) Compressed spring | (q) Gain in kinetic energy   |
| (C) Ball hit with bat | (r) Loss in potential energy |
| (D) Glowing of bulb   | (s) Gain in energy           |
- (1) (A)-r, (B)-s, (C)-q, (D)-p (2) (A)-p, (B)-r, (C)-s, (D)-q  
 (3) (A)-s, (B)-p, (C)-r, (D)-q (4) (A)-q, (B)-r, (C)-p, (D)-s
73. Bats detect the obstacles in their path by receiving the reflected  
 (1) infrasonic waves (2) ultrasonic waves (3) micro waves (4) radio waves
74. The distance between two consecutive compressions or rarefactions in a wave of wavelength,  $\lambda$  is  
 (1)  $2\lambda$  (2)  $\lambda/2$  (3)  $\lambda/4$  (4)  $\lambda$

Space For Rough Work

75. The path of a ray of light coming from air passing through a rectangular slab traced by four students are shown by figures A, B, C and D. Which one of them is correct?



76. The change in focal length of an eye lens is caused by the action of the  
 (1) pupil (2) iris (3) ciliary muscles (4) retina
77. The correct set up for studying the dependence of the current on the potential difference across a resistor is :



78. On the basis of following features identify the correct option  
 I. They always start from north pole and end at the south pole of the magnet outside the magnet.  
 II. They never intersect each other.

- (1) Electric lines of force (2) Magnetic lines of force  
 (3) Both (1) and (2) (4) Neither (1) nor (2)
79. Match column-I with column-II and select the correct answer using the codes given below :

Column I	Column II
(A) Fossil fuels	(p) Renewable
(B) Wind energy	(q) Non-renewable
(C) Silicon	(r) Solar energy
(D) Nuclear fusion	(s) Solar cells

- (1) (A)-q, (B)-p, (C)-s, (D)-r (2) (A)-p, (B)-r, (C)-s, (D)-q  
 (3) (A)-s, (B)-p, (C)-r, (D)-q (4) (A)-q, (B)-r, (C)-p, (D)-s

80. Consider the following statements :
- (a) Our energy requirements increase with our standard of living.  
 (b) We need to look for more and more sources of energy to meet our energy requirements.  
 Which of the above statement(s) is/are correct?  
 (1) Only (a) (2) Only (b) (3) Both (a) and (b) (4) Neither (a) nor (b)

Space For Rough Work