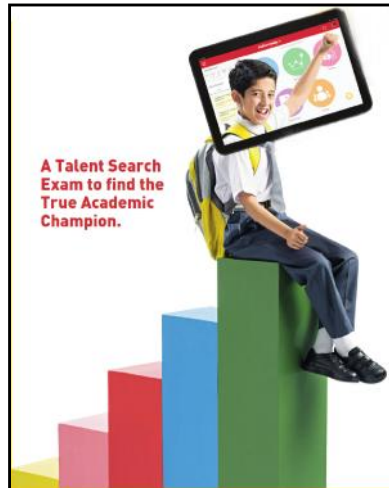


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SAMPLE QUESTIONS

for

CLASS XII-MED

Name : _____

School Name : _____

Contact No. : _____



Contact us at :

Campus Chandigarh : SCO No.-350,351 & 352, Sector 34A, Tel. 0172-4612029, 8556015577

Campus Panchkula : SCO-264, 2nd Floor, Sector-14, Tel. 0172-4004028, 4005028

Campus Patiala : SCF 99-102, Chotti Barandari. Tel. 0175-5012029, 5012030

INSTRUCTIONS

Time duration: 1:00 hr. (Time of OMR filling is included in time duration).

Maximum Marks: 240

This Paper contains 60 questions divided in three sections

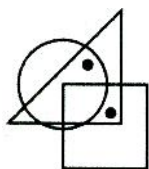
Section-A	MAT	30 questions	120 marks
Section-B	Physics	10 questions	40 marks
Section-C	Chemistry	10 questions	40 marks
Section-D	Biology	10 questions	40 marks

Each Question has a single correct answer.

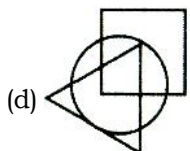
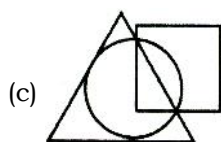
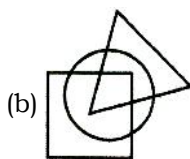
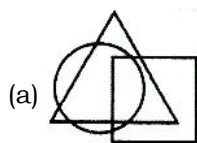
Marking Scheme: +4 marks for correct answers. There is **NO NEGATIVE MARKING**

SECTION-A (MAT)
MENTAL APTITUDE

1.



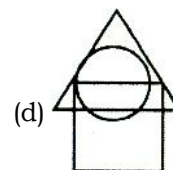
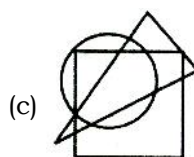
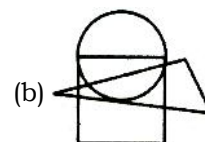
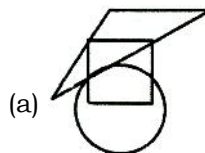
(X)

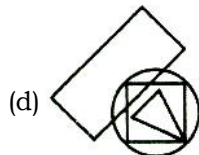
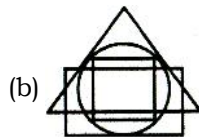
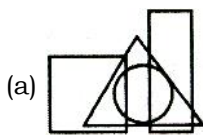
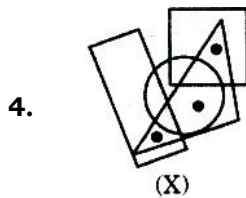
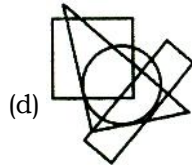
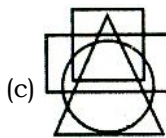
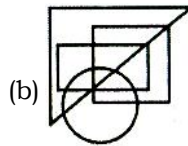
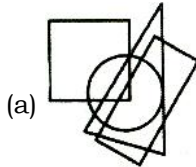
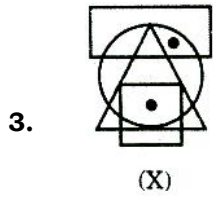


2.



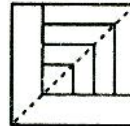
(X)



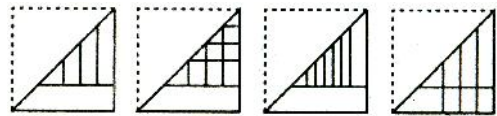


Directions (Q. no. 5 to 21): In each of the following problems, a square transparent sheet with a pattern is given. Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

5. Transparent Sheet

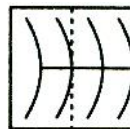


Response Figures

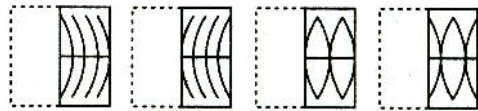


(a) (b) (c) (d)

6. Transparent Sheet

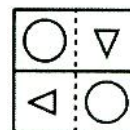


Response Figures

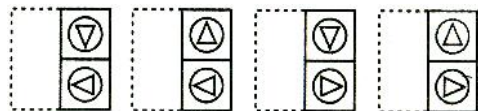


(a) (b) (c) (d)

7. Transparent Sheet

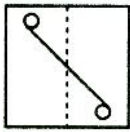


Response Figures

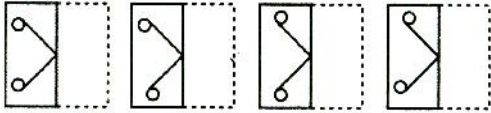


(a) (b) (c) (d)

8. Transparent Sheet

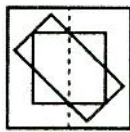


Response Figures

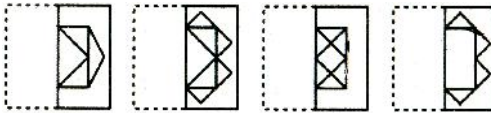


(a) (b) (c) (d)

9. Transparent Sheet

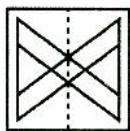


Response Figures

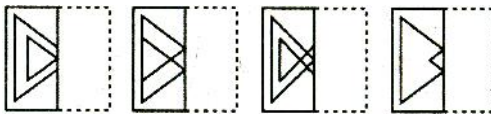


(a) (b) (c) (d)

10. Transparent Sheet

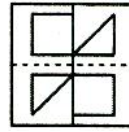


Response Figures

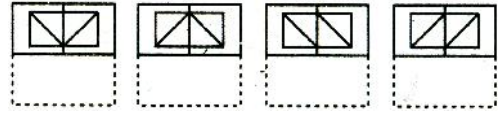


(a) (b) (c) (d)

11. Transparent Sheet

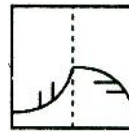


Response Figures



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

12. Transparent Sheet

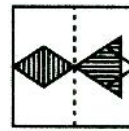


Response Figures

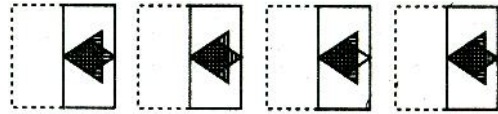


(a) (b) (c) (d)

13. Transparent Sheet

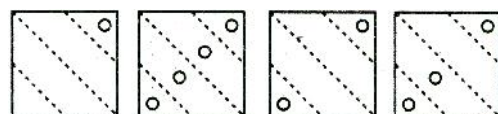
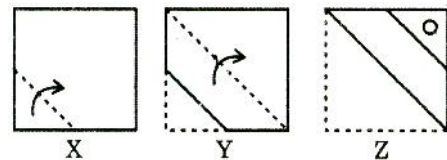


Response Figures

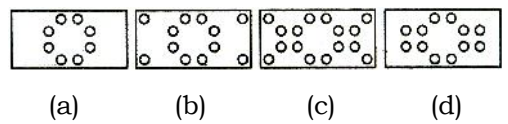
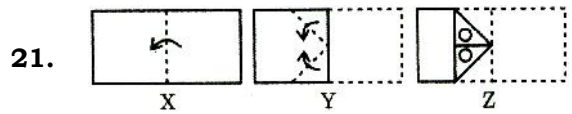
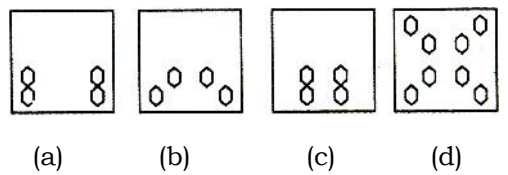
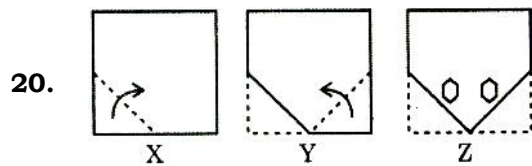
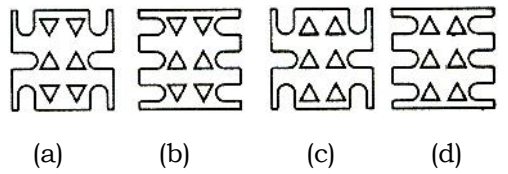
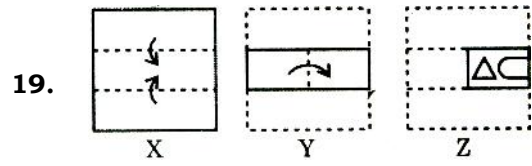
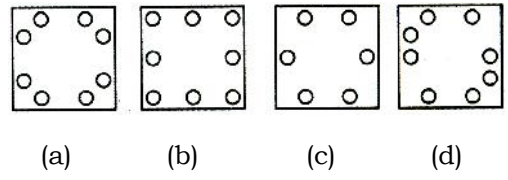
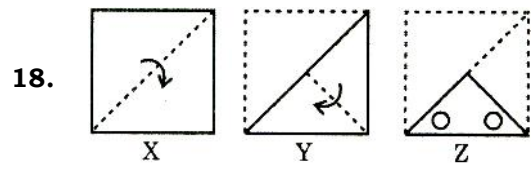
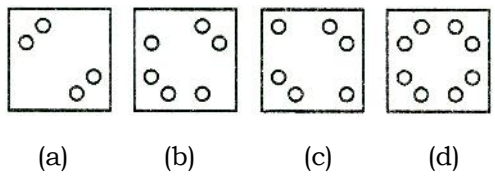
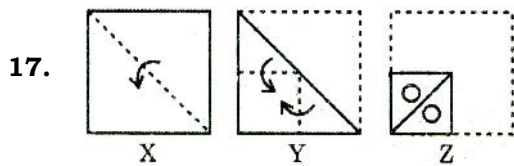
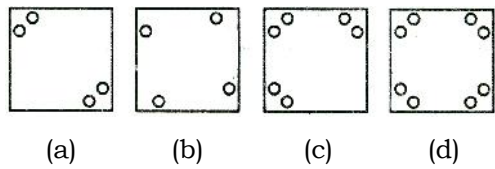
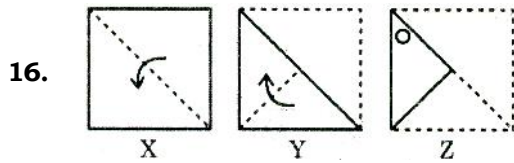
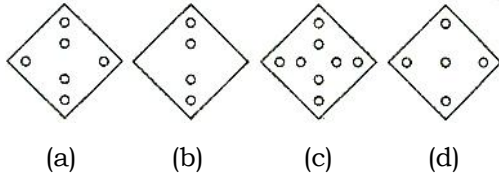
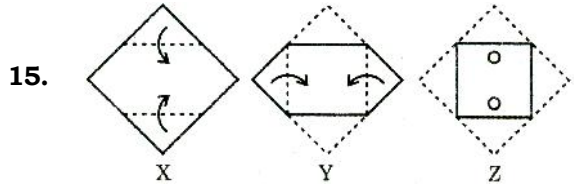


(a) (b) (c) (d)

14.



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



Directions (Q. no. 22 to 30) : In each of the following questions, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below each question :

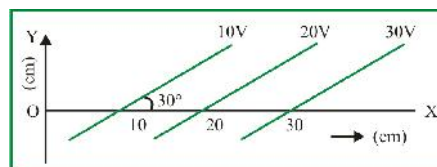
- 22.** 1. Honey 2. Flower
3. Bee 4. Wax
(a) 1, 3, 4, 2 (b) 2, 1, 4, 3
(c) 2, 3, 1, 4 (d) 4, 3, 2, 1
- 23.** 1. Site 2. Plan
3. Rent 4. Money
5. Building 6. Construction
(a) 1, 2, 3, 6, 5, 4 (b) 2, 3, 6, 5, 1, 4
(c) 3, 4, 2, 6, 5, 1 (d) 4, 1, 2, 6, 5, 3
- 24.** 1. Reading 2. Composing
3. Writing 4. Printing
(a) 1, 3, 2, 4 (b) 2, 3, 4, 1
(c) 3, 1, 2, 4 (d) 3, 2, 4, 1
- 25.** 1. Sentence 2. Chapter
3. Letter 4. Book
5. Word 6. Paragraph
(a) 4, 2, 1, 6, 5, 3 (b) 4, 2, 6, 1, 5, 3
(c) 4, 6, 1, 2, 3, 5 (d) 4, 6, 2, 5, 1, 3

- 26.** 1. Cut 2. Put on
3. Mark 4. Measure
5. Tailor
(a) 1, 2, 3, 4, 5 (b) 2, 4, 3, 1, 5
(c) 3, 1, 5, 4, 2 (d) 4, 3, 1, 5, 2
- 27.** 1. Police 2. Punishment
3. Crime 4. Justice
5. Judgement
(a) 1, 2, 3, 4, 5 (b) 3, 1, 2, 4, 5
(c) 3, 1, 4, 5, 2 (d) 5, 4, 3, 2, 1
- 28.** 1. Country 2. Furniture
3. Forest 4. Wood
5. Trees
(a) 1, 3, 5, 4, 2 (b) 1, 4, 3, 2, 5
(c) 2, 4, 3, 1, 5 (d) 5, 2, 3, 1, 4
- 29.** 1. Elephant 2. Cat
3. Mosquito 4. Tiger
5. Whale
(a) 1, 3, 5, 4, 2 (b) 2, 5, 1, 4, 3
(c) 3, 2, 4, 1, 5 (d) 5, 3, 1, 2, 4
- 30.** 1. Key 2. Door
3. Lock 4. Room
5. Switch on
(a) 1, 2, 3, 5, 4 (b) 1, 3, 2, 4, 5
(c) 4, 2, 1, 5, 3 (d) 5, 1, 2, 4, 3

SECTION-B

PHYSICS

- 31.** If potential $V = xy$, then find work done to move $2C$ charge from $A(2, 2)$ to $B(-1, -1)$.
- (a) $+6J$ (b) $+5J$
(c) $+3J$ (d) $-3J$
- 32.** A particle of mass m and charge q is placed at rest in a uniform electric field E and then released. The kinetic energy attained by the particle after moving a distance y is
- (a) qEy^2 (b) qE^2y
(c) qEy (d) q^2Ey
- 33.** Let V and E be the potential and electric field respectively at a point due to charge distribution. Which of the following assertion is true.
- (a) if $V = 0$ then E must be zero
(b) $V \neq 0$, then E can not be zero
(c) if $E \neq 0$, V can not be zero
(d) if $V = 0$, E may be zero
- 34.** A point charge Q is moved along a circular path around another fixed point charge. The work done is zero
- (a) only if Q returns to its starting point
(b) only if the two charges have the same magnitude
(c) only if the two charges have the same magnitude and opposite signs
(d) in all cases
- 35.** Two positively charged particles X and Y are initially far away from each other and at rest. X begins to move towards Y with some initial velocity. The total momentum and energy of the system are p and E .
- (a) If Y is fixed, both p and E are conserved.
(b) If Y is fixed, E is conserved, but not p .
(c) If both are free to move, p is conserved but not E .
(d) If both are free, E is conserved, but not p .
- 36.** Equipotential surfaces are shown in figure. Then the electric field strength will be



- (a) 100 Vm^{-1} along X-axis
(b) 100 Vm^{-1} along Y-axis
(c) 200 Vm^{-1} at an angle 120° with X-axis
(d) 50 Vm^{-1} at an angle 120° with X-axis

- 37.** An arc of radius r carries charge. The linear density of charge is λ and the arc subtends an angle $\pi/3$ at the centre. What is electric potential at the centre
- (a) $\frac{\lambda}{4\epsilon_0}$ (b) $\frac{\lambda}{8\epsilon_0}$
(c) $\frac{\lambda}{12\epsilon_0}$ (d) $\frac{\lambda}{16\epsilon_0}$
- 38.** A thin conducting ring of radius r has an electric charge $+Q$, if a point charge q is placed at the centre of the ring, then tension of the wire of ring will be
- (a) $\frac{Qq}{8\pi\epsilon_0 r^2}$ (b) $\frac{Qq}{4\pi\epsilon_0 r^2}$
(c) $\frac{Qq}{8\pi^2\epsilon_0 r^2}$ (d) $\frac{Qq}{4\pi^2\epsilon_0 r^2}$
- 39.** Eight oil drops of same size are charged to a potential of 50 V each. These oil drops are merged into one single large drop. What will be the potential of the large drop ?
- (a) 50 V (b) 100 V
(c) 200 V (d) 400 V
- 40.** Two identical thin rings, each of radius R metres, are coaxially placed a distance R metres apart. If Q_1 coul, and Q_2 coul, are respectively the charges uniformly spread on the two rings, the work done in moving a charge q from the centre of one ring to that of the other is :
- (a) zero
(b) $\frac{q(Q_1 - Q_2)(\sqrt{2} - 1)}{(4\sqrt{2}\pi\epsilon_0 R)}$
(c) $\frac{q\sqrt{2}(Q_1 - Q_2)}{(4\pi\epsilon_0 R)}$
(d) $\frac{q(Q_1 + Q_2)(\sqrt{2} + 1)}{(4\sqrt{2}\pi\epsilon_0 R)}$

SECTION-C CHEMISTRY

41. What will be the mole fraction of ethanol in a sample of spirit containing 85% ethanol by mass ?
 (a) 0.69 (b) 0.82
 (c) 0.85 (d) 0.60
42. The normality of 1 M H_3PO_4 is
 (a) 1 N (b) 0.5 N
 (c) 2 N (d) 3 N
43. Mixture of volatile components A and B has total vapour pressure (in torr) :

$$P_{\text{Total}} = 254 - 119x_A$$

where x_A is mol fraction of A in mixture.

Hence P_A^0 and P_B^0 are (in torr) :

- (a) 254,119 (b) 119,254
 (c) 135,254 (d) 154,119
44. The vapour pressure of water at room temperature is 23.8 mm Hg. The vapour pressure of an aqueous solution of sucrose with mole fraction 0.1 is equal to
 (a) 23.9 mm Hg (b) 24.2 Hg
 (c) 21.42 mm Hg (d) 20.44 mm Hg.
45. Match the column I with column II and mark the appropriate choice.

Column I

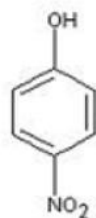
Column II

- (A) $\Delta H_{\text{mix}} = 0, \Delta V_{\text{mix}} = 0$ (i) Non-ideal solution
 (B) $\Delta H_{\text{mix}} \neq 0, \Delta V_{\text{mix}} \neq 0$ (ii) Positive deviation
 (C) $\Delta H_{\text{mix}} < 0, \Delta V_{\text{mix}} < 0$ (iii) Ideal solution
 (D) $\Delta H_{\text{mix}} > 0, \Delta V_{\text{mix}} > 0$ (iv) Negative deviation
- (a) (A) \rightarrow (i), (B) \rightarrow (iii), (C) \rightarrow (ii), (D) \rightarrow (iv)
 (b) (A) \rightarrow (iii), (B) \rightarrow (i), (C) \rightarrow (iv), (D) \rightarrow (ii)
 (c) (A) \rightarrow (ii), (B) \rightarrow (iii), (C) \rightarrow (iv), (D) \rightarrow (i)
 (d) (A) \rightarrow (iii), (B) \rightarrow (i), (C) \rightarrow (ii), (D) \rightarrow (iv)

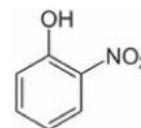
46. Which of the following liquid pairs shows a positive deviation from Raoult's law ?

- (a) Water—hydrochloric acid
 (b) Benzene—methanol
 (c) Water—nitric acid
 (d) Acetone—chloroform

47. Out of the compounds below the vapour pressure of (B) at a particular temperature is



(A)



(B)

- (a) Higher than that of (A)
 (b) Lower than that of (A)
 (c) Higher or lower than (A), depending on the size of the vessel
 (d) Same as that of (A)

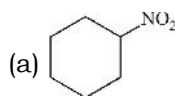
48. Molarity of liquid HCl of 36.5% w/w, if the density of solution is 1.17 g/cc is

- (a) 36.5 (b) 18.25
 (c) 11.7 (d) 42.10

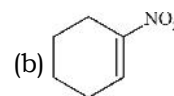
49. 5 L of a solution contains 25 mg of $CaCO_3$. What is its concentration in ppm ?

- (a) 25 (b) 1
 (c) 5 (d) 2500

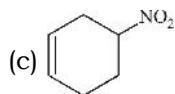
50. Inductive effect of $-NO_2$ group operates in



(a)



(b)



(c)

(d) all of these

SECTION-D
BIOLOGY

51. After fertilization the outer integument forms:
(a) Testa (b) Tegmen
(c) Perisperm (d) Pericarp
52. Find out the correct statement:
(a) Parthenocarpic fruits are seedless
(b) Parthenocarpy can be induced through the application of growth hormones
(c) Parthenocarpic seeds are developed by fertilized ovary
(d) Both (a) and (b)
53. Urine test of pregnancy detects:
(a) Human chorionic gonadotropic hormone
(b) Estrogen
(c) Progesterone
(d) Luteinizing hormone
54. The scrotum regulates the temperature of the testis through the action of the:
(a) Gubernaculum
(b) Cremaster muscle
(c) Epididymis
(d) Tunica albuginea
55. Which of the following options shows two plants in which new plantlets arise from the same organ?
(a) Dahlia and ginger
(b) Potato and sweet potato
(c) Dahlia and rose
(d) Potato and sugarcane
56. After a sperm has penetrated an ovum, entry of other sperm is prevented by
(a) Condensation of yolk
(b) Formation of pigment coat
(c) Development of vitelline membrane
(d) Development of fertilisation membrane
57. Select the option which arranges the given organisms in ascending order of their life span:
(a) Parrot < Crow < Butterfly < Banyan tree
(b) Butterfly < Crow < Parrot < Crocodile
(c) Fruit fly < Crocodile < Parrot < Banyan tree
(d) Parrot < Tortoise < Dog < Crow
58. Correct sequence of hormone secretion from beginning of menstruation is:
(a) FSH, progesterone, estrogen
(b) Estrogen, FSH, progesterone
(c) FSH, estrogen, progesterone
(d) Estrogen, progesterone, FSH
59. Which is unpaired gland in male reproductive system of human?
(a) Bertholin gland
(b) Seminal vesicle
(c) Prostate gland
(d) Cowper's gland
60. In double fertilization, the total number of male nuclei and total number of female nuclei involved are respectively:
(a) 3 and 2 (b) 2 and 3
(c) 2 and 2 (d) 3 and 3

Dream on !!



SECTION-A (MAT)
MENTAL APTITUDE

- | | | | | |
|---------|---------|---------|---------|---------|
| 1. (a) | 2. (c) | 3. (d) | 4. (a) | 5. (a) |
| 6. (c) | 7. (c) | 8. (c) | 9. (b) | 10. (b) |
| 11. (a) | 12. (d) | 13. (d) | 14. (a) | 15. (b) |
| 16. (a) | 17. (d) | 18. (a) | 19. (b) | 20. (b) |
| 21. (a) | 22. (c) | 23. (d) | 24. (d) | 25. (b) |
| 26. (d) | 27. (c) | 28. (a) | 29. (c) | 30. (b) |

SECTION-B
PHYSICS

- | | | | | |
|---------|---------|---------|---------|---------|
| 31. (a) | 32. (c) | 33. (d) | 34. (d) | 35. (b) |
| 36. (c) | 37. (c) | 38. (c) | 39. (c) | 40. (b) |

SECTION-C
CHEMISTRY

- | | | | | |
|---------|---------|---------|---------|---------|
| 41. (a) | 42. (d) | 43. (c) | 44. (c) | 45. (b) |
| 46. (b) | 47. (a) | 48. (c) | 49. (c) | 50. (d) |

SECTION-D
BIOLOGY

- | | | | | |
|---------|---------|---------|---------|---------|
| 51. (a) | 52. (d) | 53. (a) | 54. (b) | 55. (d) |
| 56. (d) | 57. (c) | 58. (c) | 59. (c) | 60. (b) |