

MENIIT

NEET | IIT-JEE | FOUNDATION

Corporate Office: 44-A/1, Kalu Sarai, New Delhi 110016 | **Web:** www.meniit.com

ADMISSION TEST (FOUNDATION)

SAMPLE PAPER 1

COURSE
FOUNDATION-X
(IX going to X)

ADMISSION TEST PATTERN

SCIENCE : 60 MCQs

MATHEMATICS : 30 MCQs

MENTAL ABILITY : 10 MCQs

Total Questions: 100

Test Duration: 120 minutes (2 Hours)

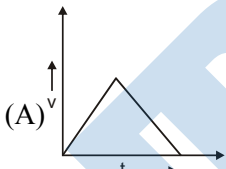
SECTION A : SCIENCE

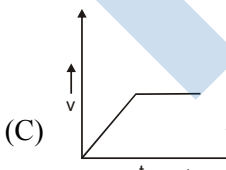
- A car travels $\left(\frac{1}{4}\right)^{th}$ of a circle with radius r . The ratio of the distance to its displacement is-

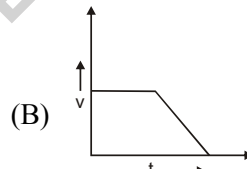
(A) $1 : \frac{\pi}{2\sqrt{2}}$ (B) $\frac{\pi}{2\sqrt{2}} : 1$
 (C) $2\sqrt{2} : \pi$ (D) $\pi 2\sqrt{2} : 1$
- A bus travelled the first one-third distance at the speed of 10 km/h, the next one-third at 20 km/h and the last one-third at 60 km/h. The average speed of the bus is

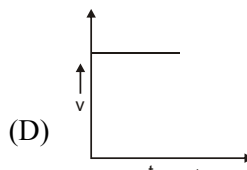
(A) 9 km/h (B) 16 km/h
 (C) 18 km/h (D) 48 km/h
- A stone is dropped from the top of a tower. Its velocity after it has fallen 20 m is [Take $g = 10 \text{ ms}^{-2}$]:

(A) 5 ms^{-1} (B) 10 m s^{-1}
 (C) 15 m s^{-1} (D) 20 m s^{-1}
- Which of the figure corresponds to a cast when body travels for a certain time with uniform acceleration and then with a uniform velocity for the rest of the time?

(A) 

(C) 

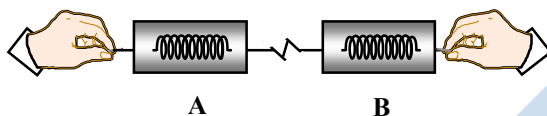
(B) 

(D) 
- Find the ratio of the distance covered to the displacement covered by a body along a semicircle of radius r :

(A) 2π (B) $\frac{\pi}{2}$
 (C) π (D) None of these
- A body strikes the floor vertically with a speed 'u' and rebounds at the same speed. The change in velocity would be:

(A) u (B) 3u
 (C) 2u (D) zero

7. A body of mass M strikes against wall with a velocity v and rebounds with the same velocity. Its change in momentum is -
 (A) zero (B) Mv
 (C) $-Mv$ (D) $-2 Mv$
8. A bullet of mass 0.01 kg is fired from a gun weighing 5.0 kg . If the initial speed of the bullet is 250 m/s , calculate the speed with which the gun recoils-
 (A) -0.50 m/s (B) -0.25 m/s
 (C) $+0.05 \text{ m/s}$ (D) $+0.25 \text{ m/s}$
9. Consider two spring balances hooked as shown in the figure. We pull them in opposite directions. If the reading shown by A is 1.5 N , the reading shown by B will be -



- (A) 1.5 N (B) 2.5 N
 (C) 3.0 N (D) zero
10. A Diwali rocket is ejecting 0.05 kg of gases per second at a velocity of 400 ms^{-1} . The accelerating force on the rocket is:
 (A) 20 dyne (B) 20 Newton
 (C) 20 kg wt. (D) sufficient data not given
11. A body A has mass 5 kg . Now this is broken into 2 pieces. Is inertia of the two pieces combined more than the inertia of A when it was not broken:
 (A) Yes (B) No
 (C) May or may not be (D) None of these
12. A body of mass 50 kg moves with an acceleration of 4 m/s^2 . The rate of change of momentum in SI unit is:
 (A) 100 N (B) 50 N
 (C) 200 N (D) 300 N
13. The value of G in year 1900 was $6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$. The value of G in the year 2007 will be:
 (A) $6.673 \times 10^{-9} \text{ Nm}^2 \text{ kg}^{-2}$ (B) $6.673 \times 10^{-10} \text{ Nm}^2 \text{ kg}^{-2}$
 (C) $6.673 \times 10^{-2} \text{ Nm}^2 \text{ kg}^{-2}$ (D) $6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
14. Value of G on surface of earth is $6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$, then value of G on surface of Jupiter is:
 (A) $12 \times 6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
 (B) $\frac{6.673}{12} \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
 (C) $6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
 (D) $\frac{6.673}{6} \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
15. The force acting on a ball due to earth has a magnitude F_b and that acting on the earth due to the ball has a magnitude F_e . Then:
 (A) $F_b = F_e$ (B) $F_b > F_e$
 (C) $F_b < F_e$ (D) $F_e = 0$

16. The ratio of the value of g on the surface of moon to that on the earth's surface is:
- (A) 6 (B) $\sqrt{6}$
(C) $\frac{1}{6}$ (D) $\frac{1}{\sqrt{6}}$
17. If the distance between two masses be doubled then the force between them will become:
- (A) $\frac{1}{4}$ times (B) 4 times
(C) $\frac{1}{2}$ times (D) 2 times
18. A particle is taken to a height R above the earth's surface, where R is the radius of the earth. The acceleration due to gravity there is -
- (A) 2.45 m/s^2 (B) 4.9 m/s^2
(C) 9.8 m/s^2 (D) 19.6 m/s^2
19. Force F acts on a body such that force F makes an angle θ with the horizontal direction and the body is also displaced through a distance S in the horizontal direction, then the work done by the force is -
- (A) FS (B) $FS \cos \theta$
(C) $FS \sin \theta$ (D) zero
20. If a stone of mass ' m ' falls a vertical distance ' d ' the decrease in gravitational potential energy is-
- (A) $\frac{Mg}{d}$ (B) $\frac{Mg^2}{2}$
(C) mgd (D) $\frac{Mg}{d^2}$
21. An object of mass 10 kg falls from height 10 m. Kinetic energy gained by the body will be approximately equal to:
- (A) 1000 J (B) 500 J
(C) 100 J (D) None of these
22. The value of g on moon is $\frac{1}{6}$ th of the value of g on the earth. A man can jump 1.5 m high on the earth. On moon he can jump up to a height of:
- (A) 9 m (B) 7.5 m
(C) 6 m (D) 4.5 m
23. An object of mass 1 kg has a P.E. of 1 J relative to the ground when it is at a height of: ($g = 9.8 \text{ m/s}^2$)
- (A) 0.10 m (B) 10 m
(C) 9.8 m (D) 32 m
24. To lift a 5 kg mass to a certain height, amount of energy spent is 245 J. The mass was raised to a height of:
- (A) 15 m (B) 10 m
(C) 7.5 m (D) 5 m

25. Which of the following matter exists in almost all three states?
(A) Mercury (B) Liquid sodium
(C) Water (D) Iron
26. Which of the following substance undergo sublimation process?
(A) Ice (B) Solid carbon dioxide
(C) Camphor (D) Both (C) and (B)
27. At which temperature iron exists in liquid state?
(A) 40°C (B) 1535°C
(C) -732°C (D) None of these
28. Solids do not flow because
(A) large molecular spaces between particles
(B) they do not have definite shape
(C) there have very strong intermolecular forces in between particles
(D) all of these
29. Liquids can easily flow because
(A) particles are closely packed together
(B) intermolecular forces are negligible
(C) intermolecular forces are strong but not enough to keep them together
(D) none of these
30. Which one of the following is fixed in liquid?
(A) Shape (B) Velocity
(C) Volume (D) All of these
31. Which of the following is indefinite in liquid?
(A) Density (B) Shape
(C) Volume (D) Mass
32. Which of the following is not a compound?
(A) Sodium chloride (B) Water
(C) Iron filings (D) Copper sulphate
33. Which of the following is not a mixture?
(A) Sand in water (B) Sugar solution
(C) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (D) Milk
34. Brass contains -
(A) Gold and copper (B) Copper and zinc
(C) Copper and silver (D) Copper and tin
35. Which of the following is not a chemical change?
(A) Electrolysis of water
(B) Boiling of water
(C) Digestion of food
(D) Burning of magnesium ribbon in oxygen to form magnesium oxide

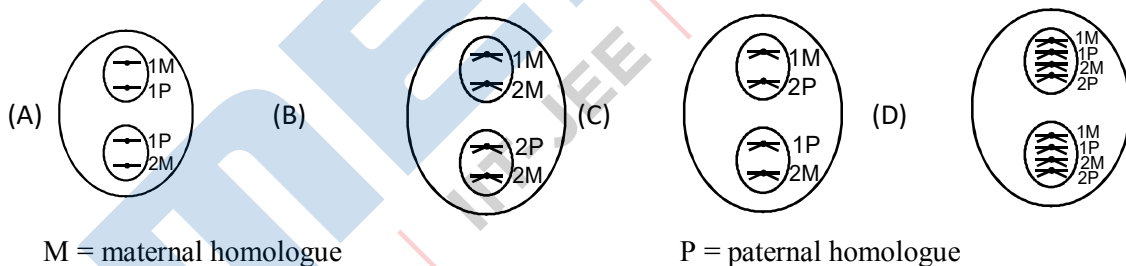
36. Which of the following is liquid metal?
(A) Copper (B) Mercury
(C) Bromine (D) Silver
37. Which of the following cannot be pure substance?
(A) Mercury (B) Sugar
(C) Blood (D) Glucose
38. Which of the following can be classified as a compound?
(A) Milk (B) Sea-Water
(C) Ice (D) Cast iron
39. Atomic radius of atoms is measured in nanometres (nm). One nanometre is equal to-
(A) 10^{-10} metre (B) 10^{-9} metre
(C) 10^{-10} cm (D) 10^{-9} cm
40. Symbol of which element has been derived from its Latin name?
(A) Sodium (B) Iron
(C) Copper (D) All
41. Symbol of which element has been derived from its English name?
(A) Hydrogen (B) Carbon
(C) Aluminium (D) All
42. One unified mass (u) is equal to -
(A) 1.66×10^{-24} g (B) 1.66×10^{-23} g
(C) 1.66×10^{-24} kg (D) 1.66×10^{-23} kg
43. Polyatomic ion has -
(A) More than one-unit negative charge
(B) More than one-unit positive charge
(C) Either more than one-unit negative charge or positive charge
(D) Two or more atoms having charge
44. Which of the following are monovalent ions?
(A) Chloride and sulphate (B) Nitrite and nitrate
(C) Carbonate and sulphide (D) Oxide and bromide
45. Cell organelle which differentiates plant cell from animal cell is –
(A) Cell Membrane (B) Plastids
(C) Nucleolus (D) Vacuoles
46. Example of cell organelle which do not have a unit membrane is
(A) Mitochondria (B) Lysosome
(C) Ribosome (D) Plastid

47. Chromosome reaches the equator during which stage of cell division
 (A) Prophase (B) Metaphase
 (C) Anaphase (D) Telophase
48. Decreasing order of size is:
 (A) DNA, t RNA, m RNA (B) m RNA, DNA, t RNA
 (C) t RNA, DNA, m RNA (D) DNA, m RNA, t RNA
49. Sequence of cell cycle is:
 (A) G_I, G_{II}, S (B) S, G_I, G_{II}
 (C) G_I, S, G_{II} (D) G_I, G_{II}, G_{III}

50. Mitosis
 (A) leads to recombinant daughter cells
 (B) is a reduction division
 (C) leads to formation of parental type of daughter cells
 (D) occurs in gametes

51. Mitochondria and chloroplasts are similar because
 (A) Both have nuclei
 (B) Both have 80s ribosomes
 (C) Both have DNA
 (D) Both have single membrane envelope

52. Which one of the following diagram depict early telophase – I.



53. Which tissue acts to increase length of a grass stem?
 (A) Primary meristematic (B) Apical Meristem
 (C) Lateral meristem (D) Intercalary Meristem
54. The function of xylem in plants is
 (A) Transport of food
 (B) Transport of oxygen
 (C) Transport of water and minerals
 (D) transport of aminoacids
55. The muscles found connected to the bones are –
 (A) Striated muscles (B) Unstriated muscles
 (C) Cardiac muscles (D) All of above

56. Which of the following statement is correct that is related to phloem of plants?
- (A) Phloem in pinus contains phloem fibres
 (B) Phloem in sunflower does not contain parenchyma
 (C) Phloem in cycas contains companion cells
 (D) Phloem in Mango does not contain parenchyma
57. Permanent tissues are derived from -
- (A) Simple tissue (B) Meristematic tissue
 (C) Complex tissue (D) Collenchyma
58. Protective tissue is -
- (A) Xylem (B) Chlorenchyma
 (C) Phloem (D) Cork
59. Which of the following is an example of photosynthetic type of tissue?
- (A) Chlorenchyma (B) Sclerenchyma
 (C) Colleenchyma (D) Aerenchyma
60. Which of the following statement is false about meristematic tissue?
- (A) They contain dense cytoplasm
 (B) The endoplasmic reticulum & mitochondria are fully developed
 (C) These are the most metabolically active cells
 (D) Meristematic cells are similar in structure

Section B – MATHEMATICS

61. What is the value of 4^{2x-2} , if $(16)^{2x+3} = (64)^{x+3}$?
- (A) 64 (B) 256
 (C) 32 (D) 512
62. If $2^{-m} \times \frac{1}{2^{+m}} = \frac{1}{4}$, then $\frac{1}{14} \left[(4^m)^{\frac{1}{2}} + \left(\frac{1}{5^m} \right)^{-1} \right] =$
- (A) $\frac{1}{2}$ (B) 2
 (C) 4 (D) $-\frac{1}{4}$
63. Find $2 [(16 - 15)^{-1} + 25 (13 - 8)^{-2}]^{-1} + (1024)^0 =$
- (A) 2 (B) 3
 (C) 1 (D) 5
64. If $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$, then what is the value of x ?
- (A) -5 (B) -6
 (C) -4 (D) -2

65. Which one of the following is a polynomial?

(A) $\frac{x^2}{2} - \frac{2}{x^2}$

(B) $\sqrt{2x} - 1$

(C) $x^2 + \frac{3x^{\frac{3}{2}}}{\sqrt{x}}$

(D) $\frac{x-1}{x+1}$

66. Degree of the polynomial

$4x^4 + 0x^3 + 0x^5 + 5x + 7$ is:

(A) 4

(B) 5

(C) 3

(D) 7

67. The value of the polynomial $5x - 4x^2 + 3$, when $x = -1$ is :

(A) -6

(B) 6

(C) 2

(D) -2

68. If $p(x) = x + 3$, then $p(x) + p(-x)$ is equal to:

(A) 3

(B) $2x$

(C) 0

(D) 6

69. For $x = 3$, $y = 2$, $u = -9$, $v = 13$ the point $(x + y, u + v)$ lies in the quadrant:

(A) III

(B) II

(C) IV

(D) I

70. Mirror image of point $(3, 9)$ on x-axis is:

(A) $(-3, 9)$

(B) $(9, 3)$

(C) $(3, 9)$

(D) $(3, -9)$

71. Which of the point lies in IInd quadrant?

(A) $(4, 7)$

(B) $(-4, 7)$

(C) $(-4, -7)$

(D) $(-7, 4)$

72. The distance of the point $(-1, -8)$ from y-axis is:

(A) -1 unit

(B) -8 units

(C) 1 unit

(D) 8 units

73. If equals be added to equals, then whole are:

(A) unequal

(B) twice of each other

(C) half of the other

(D) equal

74. A circle can be drawn with any centre and any radius, is stated in the form of:

(A) an axiom

(B) a postulate

(C) a definition

(D) a theorem

75. Lines are parallel, if they do not intersect is stated in the form of:

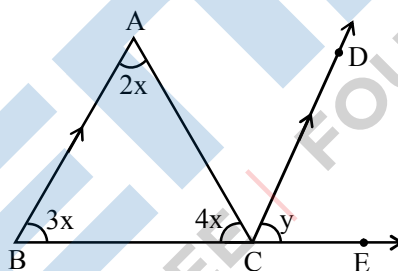
(A) a postulate

(B) an axiom

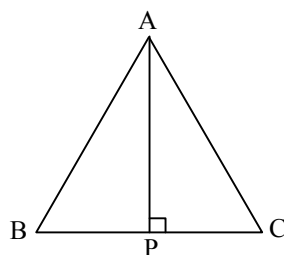
(C) a definition

(D) a proof

76. Euclid first axiom is:
 (A) If equals are added to equals, the wholes are equal
 (B) The whole is greater than part
 (C) Things which are equal to the same things are equal to one another
 (D) Things which coincide with another are equal to one another.
77. The complement of $47^\circ 32' 45''$ is:
 (A) $43^\circ 28' 15''$ (B) $43^\circ 27' 15''$
 (C) $42^\circ 27' 15''$ (D) $43^\circ 27' 15''$
78. The supplement of $75^\circ 30' 50''$ is:
 (A) $14^\circ 29' 10''$ (B) $15^\circ 30' 10''$
 (C) $105^\circ 30' 10''$ (D) $104^\circ 29' 10''$
79. The angles of a triangle are in the ratio 5: 3 :7 then the triangle is:
 (A) an acute angled triangle
 (B) an obtuse angled triangle
 (C) a right triangle
 (D) an isosceles triangle
80. In the figure, $AB \parallel CD$, then value of y is:

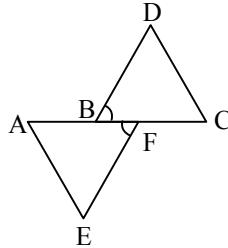


- (A) 60° (B) 40°
 (C) 80° (D) 20°
81. In the adjoining figure, $AB = AC$ and $AP \perp BC$. Then:

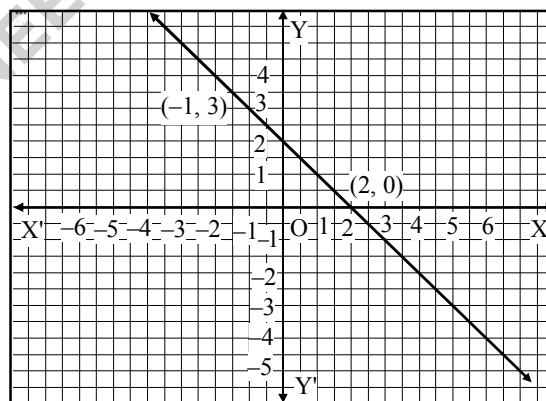


- (A) $AB = AP$ (B) $AB < AP$
 (C) $AB > AP$ (D) $AB \leq AP$
82. For a triangle ABC, which of the following is true?
 (A) $BC^2 - AB^2 = AC^2$ (B) $AB - AC = BC$
 (C) $(AB - AC) > BC$ (D) $(AB - AC) < BC$

83. Sum of any two sides of a triangle is always third side of a triangle:
 (A) Less than (B) Equal to
 (C) Greater than (D) None of these
84. In the given figure it is given that $AB = CF$, $EF = BD$ and $\angle AFE = \angle DBC$. Then $\triangle AFE$ congruent to $\triangle CBD$ by which criterion



- (A) SAS (B) SSS
 (C) ASA (D) None of these
85. Three angles of a quadrilateral are 70° , 85° and 90° . Its fourth angle is:
 (A) 90° (B) 115°
 (C) 100° (D) 85°
86. If the bisectors of the angles of a parallelogram enclose a quadrilateral, then it is a:
 (A) Rectangle (B) Parallelogram
 (C) Kite (D) Rhombus
87. If diagonals of a parallelogram are equal, then it is a:
 (A) Square only (B) Rectangle only
 (C) Rhombus only (D) Both (A) and (B)
88. In a rectangle longer side is twice the smaller side, then ratio of longer side to its diagonal is:
 (A) $\sqrt{2} : 5$ (B) $5 : \sqrt{2}$
 (C) $2 : \sqrt{5}$ (D) $\sqrt{5} : 2$
89. From the choices given below, choose the equation whose graph is given in figure



- (A) $y = x + 2$ (B) $y = x - 2$
 (C) $y = -x + 2$ (D) $x + 2y = 6$

90. Which of the following points lie on the negative side of x -axis?
- (A) $(0, -4)$ (B) $(3, 2)$
 (C) $(-4, 0)$ (D) $(5, -7)$

Section C – MENTAL ABILITY

91. Arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below each question:

- | | |
|----------------|----------------|
| 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 |

92. In question written below a statement is given followed by two conclusion I and II.

Statement: Adversity makes a man wise.

Conclusions:

- I. The poor are wise
 II. Man learns from bitter experience.

- (A) Only conclusion I is true (B) Only conclusion II is true
 (C) Both conclusions I and II are true (D) Neither conclusion I nor conclusion II are true.

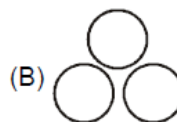
93. In a showroom, 60 percent discount is given to everybody on all the articles. The successive discount of 40 percent is offered to female students. If printed price of an article of Rs. 1000 is bought by a female student, how much she will have to pay for that article?

- (A) Inconclusive (B) Zero
 (C) Rs. 160 (D) Rs.240

94. Amit said, "This girl is the wife of the grandson of my mother." How is Amit related to the girl?

- (A) Father (B) Father-in-law
 (C) Grandfather (D) Husband

95. Which of the Venn diagrams given in the alternatives best represents the relation between the given items?
 Doctors, Engineers, Lawyers



96. Select the missing numbers in the following sequence.

3, 6, 24, 30, 63, 72, ?, ?, 195, 210

- (A) 117, 123 (B) 120, 132
 (C) 123, 135 (D) 135, 144

97. Find the missing term in figures.

6	8	4
9	12	6
15	20	?

- (A) 5 (B) 10
(C) 20 (D) 25

98. A sprinter goes off the starting block for 100m run and at that instant the second-hand of a stopwatch had pointed towards North. He touches the finishing line exactly after 12 seconds. In which direction did the second hand point when he just crossed the finishing line?

- (A) 18° North of East (B) 18° East of North
(C) 72° North of East (D) 82° East of North

99. Ashish leaves his house at 20 minutes to seven in the morning, reaches Kunal's house in 25 minutes, they finish their breakfast in another 15 minutes and leave for their office which takes another 35 minutes. At what time do they leave Kunal's house to reach their office?

- (A) 7.40 A.M. (B) 7.20 A.M.
(C) 7.45 A.M. (D) 8.15 A.M.

100. The priest told the devotee, "The temple bell is rung at regular intervals of 45 minutes. The last bell was rung five minutes ago. The next bell is due to be rung at 7.45 a.m." At what time did the priest give this information to the devotee?

- (A) 7.40 a.m. (B) 7.05 a.m.
(C) 6.55 a.m. (D) None of these

★★★★

ADMISSION TEST (FOUNDATION)

SAMPLE PAPER 1

COURSE : FOUNDATION-X (IX going to X)

ANSWER KEY

1. (B)	21. (A)	41. (D)	61. (B)	81. (C)
2. (C)	22. (A)	42. (A)	62. (A)	82. (D)
3. (D)	23. (A)	43. (D)	63. (A)	83. (C)
4. (C)	24. (D)	44. (B)	64. (C)	84. (A)
5. (B)	25. (C)	45. (B)	65. (C)	85. (B)
6. (C)	26. (D)	46. (C)	66. (A)	86. (A)
7. (D)	27. (B)	47. (B)	67. (A)	87. (D)
8. (A)	28. (C)	48. (D)	68. (D)	88. (C)
9. (A)	29. (C)	49. (C)	69. (D)	89. (C)
10. (B)	30. (C)	50. (C)	70. (D)	90. (C)
11. (B)	31. (B) (C)	51. (C)	71. (B)	91. (C)
12. (C)	32. (C)	52. (D)	72. (C)	92. (B)
13. (D)	33. (C)	53. (D)	73. (D)	93. (D)
14. (C)	34. (B)	54. (C)	74. (B)	94. (B)
15. (A)	35. (B)	55. (A)	75. (C)	95. (B)
16. (C)	36. (B)	56. (B)	76. (C)	96. (B)
17. (A)	37. (C)	57. (B)	77. (C)	97. (B)
18. (A)	38. (C)	58. (D)	78. (D)	98. (A)
19. (B)	39. (B)	59. (A)	79. (A)	99. (B)
20. (C)	40. (D)	60. (C)	80. (A)	100. (B)