ALLEN

ALLEN DIGITAL

SCHOLARSHIP

ADMISSION
TEST (ADSAT)

SYLLABUS & PATTERN CLASS-IX (MOVING TO CLASS X)

PHYSICS

1. Motion
2. Force and Newton's Laws of Motion
3. Gravitation
4. Work, Energy and Power
5. Sound

CHEMISTRY

1. Matter in our surroundings
2. Is Matter Around us Pure
3. Atoms and Molecules
4. Structure of the atom

BIOLOGY

1. The Fundamental Unit of Life
2. Tissues
3. Improvement in Food Resources

MATHS

1. Surface Areas and Volumes
2. Lines and angles
3. Circles
4. Polynomials
5. Quadrilaterals
6. Statistics
7. Heron's Formula
8. Co-ordinate Geometry
9. Linear equation in two variables
10. Triangles
11. Probability
12. Number System

IQ

1. Blood Relation
2. Coding-Decoding
3. Counting of Figure
4. Cube and Dice
5. Direction Sense
6. Embedded Figure
7. Insert the Missing Character
8. Mathematical Operation
9. Mirror Image
10. Non-Verbal Series
11. Number Ranking
12. Series
13. Venn-Diagram
14. Water Image

EXAM PATTERN

PAPER MODE: ONLINE
Part-1 Subject: IQ
Part-2 Subjects: Physics; Chemistry; Biology; Mathematics

MARKING SCHEME
+4 for correct answer, -1 for wrong answer
No negative marking in Part-1

QUESTION DISTRIBUTION
IQ: 20, Physics: 25, Chemistry: 25, Biology: 25, Mathematics: 25

QUESTION TYPE: Single Choice Questions
DURATION OF EXAM: 120 Minutes

ALLEN

ADSAT

(Allen Digital Scholarship Admission Test)

Pre-Nurture and Career Foundation Division

CLASS IX

(For Class IX moving to Class X)

READ THE INSTRUCTIONS CAREFULLY

Paper Instructions:

1. This paper is divided into two sections: **Section-A & Section-B**.

2. The questions appearing in **Section-A** are based on **Mental Ability.**

   The questions appearing in **Section-B** are based on **Physics, Chemistry, Biology and Mathematics**.

3. In **Section-A,** there are **4 marks** for each correct answer and **no negative marking**. There are **4 marks** for each correct answer and **–1 negative marking** for each wrong answer in **Section-B**.

4. Use of Calculator is Not Allowed.

Your Hard Work Leads to Strong Foundation

IMPORTANT INSTRUCTIONS

A. Mandatory for the student to ensure the following for taking the test:

1. Keep your camera switched on at all times while you take the test. Failing to keep the camera on will lead to disqualification.

2. Face the camera while taking the exam and ensure your front profile, up till your shoulder at least is visible. The background should be plain with no photo frames or designs.

3. Ensure your microphone is on and there is no disturbance in the surrounding and you're sitting in a quiet room.

4. Other than one blank sheet of paper and a pen, there should not be any book or stationery in the area where exam is being attempted.

B. Ensure the following for a smooth exam taking experience

1. You have good internet speed- 521 kbps at least for a smooth network. In case of internet issues, the timer will not be paused. ADSAT is not responsible for any such issues.

2. Keep your device connected and ensure there is enough charge.

3. In case of a power outage, ensure the internet and device can still operate and not disconnect from the exam taking experience.

C. You can be disqualified if

1. Your microphone or camera is switched off.

2. The candidate appearing for the exam is not the same as the one registered.

3. Other than the candidate there are other people in the vicinity.

4. There is excessive background noise.

5. Student tries to connect a pen-drive or similar devices while taking the exam.

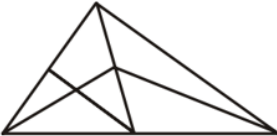6. Student tries to browse other site or uses other devices.

D. General Instructions

1. Join the test link 30 mins prior to the exam time to avoid any technical issues and to read the instructions. Test link will be shared via Email and SMS.

2. Remember to submit the test at the end of the exam.

3. The test will be conducted in proctored mode. Ensure that all the above rules are strictly followed.
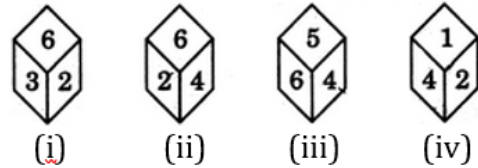
SECTION-A

MENTAL ABILITY

This section contains 18 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and there is NO negative marking.

1. Study the following information carefully and answer the question given below :
'A @ B' means 'A is sister of B'
'A % B' means 'A is son of B'
'A # B' means 'A is father of B'
'A $ B' means 'A is mother of B'
How is D related to W in the given expression?
T @ Q % D $ P # W

   (1) Mother

   (2) Grandfather

   (3) Grandmother

   (4) can't determined

2. Study the following information carefully and answer the question given below:
J is the only son of R. J is the brother of L. L's father-in-law is W. L's son is K. K's maternal grandfather is D. W's son is Q and M is the daughter of Q.
How is M related to L?

   (1) Sister

   (2) Son

   (3) Brother

   (4) Daughter

3. If ROSE is coded as 6821. CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?

   (1) 246173   (2) 214673

   (3) 214763   (4) 216473

4. How many triangles are there in the following figure ?

   (1) 11   (2) 13   (3) 9   (4) 15

5. Find out how many cubes are there in given figure.
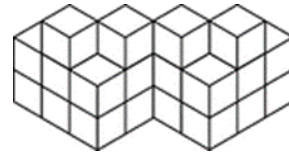

   (1) 20   (2) 50

   (3) 70   (4) 32

6. The four different positions of dice are given below. Which number is on the face opposite to 6?


   (1) 1   (2) 2

   (3) 3   (4) 4

7. P is 9 m to the South of K. K is 5 m to the East of H. H is 4 m to the North of B. L is 3 m West of B. D is 7 m South of L. G is 8 m East of D. How far and in which direction is point K from Point G?

   (1) 11 m to the South

   (2) 7 m to the North

   (3) 11 m to the North

   (4) 7 m to the West

8. In the following question, you are given a figure by four alternative figures (1), (2), (3) and (4) such that figure is embedded in one of them. Find out the alternative figure which contains figure as its part.
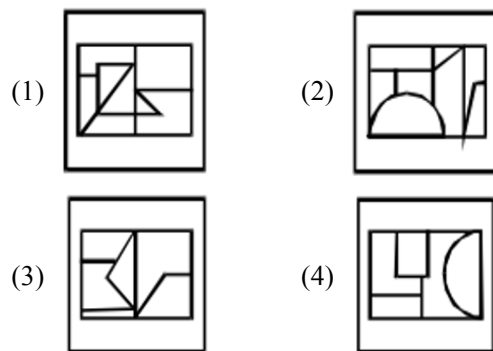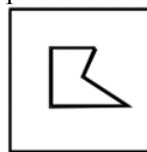
9 What number should replace the question mark in the given figure?
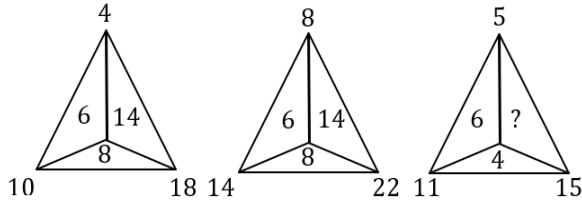
(1) 8   (2) 14

(3) 10   (4) 6

10 Which of the following interchange of sign would make the given equation correct?

$$5 + 3 \times 8 - 12 \div 4 = 3$$

(1) + and −   (2) − and ÷

(3) + and ×   (4) + and ÷

11 Find the correct option for the mirror image of the following given problem figure.
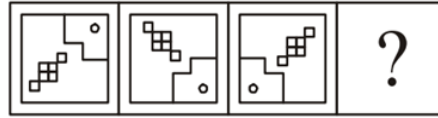

12 In the following question, you are given a combination of alphabets and/or numbers followed by four alternatives (1), (2), (3) and (4). Choose the alternative which most closely resembles the water image of the given combination.

NhRqSy

13 Select a figure from among the answer figures which will continue the same series as established by the problem figure.

14 In the following number series how many such 7's are there which are immediately preceded by an odd number and immediately followed by an even number?

2 2 7 1 3 9 4 8 7 6 5 4 2 8 3 5 7 4 6 5 9 7 8 6 4 3 9 7 4 6 5 2

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

15 In a row of boys, Haran is 11th from the left and Manoj is 17th from the right. When they exchange their places, the Haran will be 13th from the left. What will be the new position of Manoj from the right?

(1) 11th   (2) 19th   (3) 13th   (4) 17th
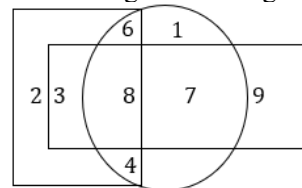
16 Find the missing term.

1, 1, 2, 6, 24, ?, 720

(1) 100   (2) 104   (3) 108   (4) 120

17 Find the venn diagram that show right relation between CAR, WOOD, and MOUSE?

18 Which are those numbers that make their presence felt in only one of the geometric figures?

(1) 4, 6, 7   (2) 1, 2, 9

(3) 3, 7, 9   (4) 2, 3, 8

SECTION-B

PHYSICS

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct.There are 4 marks each for correct answer and –1 for each incorrect answer.

19. What happens to the inertia of an object when its velocity is doubled ?

(1) The object's inertia becomes $\sqrt{2}$ times greater.

(2) The object's inertia becomes 2 times greater.

(3) The object's inertia becomes 4 times greater.

(4) The object's inertia remains unchanged.

20. A freely falling object falls through a height h in the nth second. What is the fall of height in the next second?

(1) h – g

(2) hg

(3) h +g

(4) $\dfrac{h}{g}$

21. A stone is thrown vertically upward with an initial velocity u from the top of a tower. It reaches the ground with a velocity 3u. The height of the tower is

(1) $\dfrac{3u^2}{g}$

(2) $\dfrac{4u^2}{g}$

(3) $\dfrac{6u^2}{g}$

(4) $\dfrac{9u^2}{g}$

22. To reach the same height on the moon as on the earth, a body must be projected with :

(1) Higher velocity on the moon

(2) Lower velocity on the moon

(3) Same velocity on the moon and earth

(4) It depends on the mass of the body

23. You would have the largest mass of gold if your chunk of gold weighed 1 N on

(1) Earth

(2) Jupiter

(3) the moon

(4) can't say

24. The velocity- time graph of a body moving in a straight line is shown in figure. The displacement and distance travelled by the body in 6 seconds are respectively
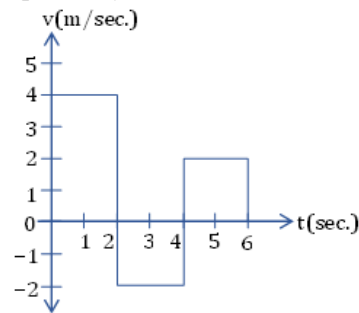
(1) 8 m,16 m

(2) 16 m, 8 m

(3) 16 m,16 m

(4) 8 m, 8 m

25. What will be the energy possessed by a stationary object of mass 10 kg placed at a height of 20 m above the ground? (take g = 10 m/s^2)

(1) 2 J

(2) 20 kJ

(3) 200 J

(4) 2 k J

26. The v-t graph of a moving object is given in figure. The maximum acceleration is
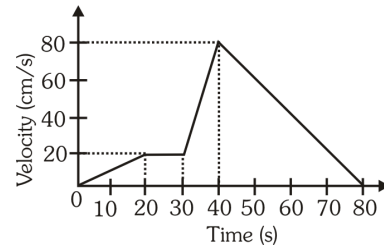
(1) 1 cm/s^2 (2) 2 cm/s^2 (3) 3 cm/s^2 (4) 6 cm/s^2

27. Acceleration-time graph for a particle moving in a straight line is as shown in figure. Change in velocity of the particle from t = 0 to t = 6 s is
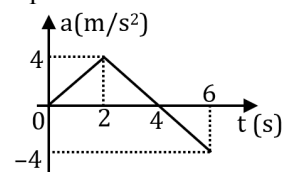

(1) 10 m/s (2) 4 m/s (3) 12 m/s (4) 8 m/s

28. A body of mass 4 Kg at rest is acted upon by a constant force of 20 N for 2 s and then the force is removed for next 2 seconds and finally it is retarded uniformly at 2 m/s^2 for 4 seconds.
What is the final momentum of the body after 8 seconds of its journey?

(1) 20 N-s

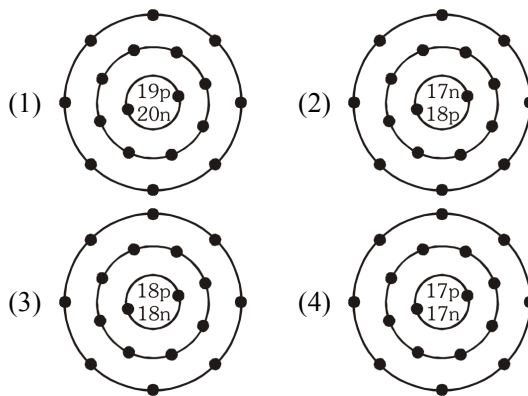(2) – 20 N-s

(3) – 40 N-s

(4) 8 N-s

CHEMISTRY

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.

29. The boiling point of diethyl ether is 35ºC. What is its value on Kelvin scale ?

  (1) 70 K   (2) 273 K

  (3) 308 K   (4) 309.15 K

30. Maximum surface area is available in which state of matter ?

  (1) Gas   (2) Liquid

  (3) Solid   (4) Plasma

31. Particles of which are visible by naked eyes

  (1) True solution   (2) Colloidal solution

  (3) Suspension   (4) None of these

32. Which of the following does not affect rate of evaporation?

  (1) Wind speed

  (2) Surface area

  (3) Temperature

  (4) Insoluble heavy impurities

33. The paper with coloured spots due to different solubilities of coloured components is called

  (1) centrogram   (2) chromatogram

  (3) carbon paper   (4) coloured paper

34. What is represented by the follwing figure ?
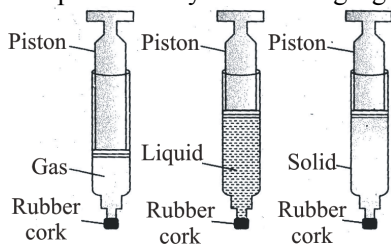
  (1) Comparison between compressibility of three states of matter.

  (2) Comparison between density of three states of matter.

  (3) Comparison between diffusion of three states of matter.

  (4) None of these

35. How many electrons are present in the M shell of the atom of an element with atomic number 20 ?

  (1) 5   (2) 6

  (3) 11   (4) 8

36. Which of the following is a correct representation of K^+?


37. The number of molecules in 35.5 g of chlorine gas is

  (1) 3.011×10^{23}

  (2) 6.022×10^{23}

  (3) 9.033×10^{23}

  (4) 1.2044×10^{24}

38. Which among the following fundamental particles is not deflected by magnetic field?

  (1) Proton

  (2) Electron

  (3) Neutron

  (4) Positron

BIOLOGY

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct. There are 4 marks each for correct answer and –1 for each incorrect answer.

39. Which one is the mis-matched pair?

  (1) Model of DNA – Watson and Crick

  (2) Golgi apparatus – Discovered by Altman

  (3) Nucleus – Contains genetic material

  (4) Cell wall – Dead & permeable

40 Identify the acrocentric chromosome from the given figure & choose the correct option

(i)   (ii)   (iii)   (iv)
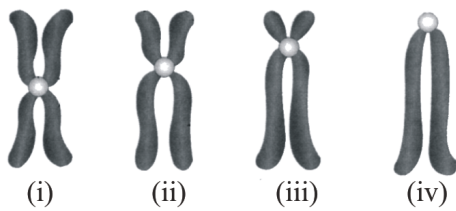
(1) (i) as the centromere is at the middle

(2) (ii) as the centromere is slightly away from the middle point.

(3) (iii) as the centromere is near the end

(4) (iv) as the centromere is at the tip

41 Select the incorrect pair out of the following.

|	Type of tissue	Function
(1)	Parenchyma	Storage, photosynthesis
(2)	Sclerenchyma	Mechanical strength
(3)	Xylem	Ascent of sap
(4)	Phloem	Conduction of water and minerals

(1) 1

(2) 2

(3) 3

(4) 4

42 Neha observed the following observations while looking into a permanent slide.

Cells are long and cylindrical Light and dark bands are present giving striated appearance

It would be a slide of :

(1) skeletal muscle fibre

(2) ligament

(3) smooth muscle fibre

(4) All of these

43 Refer to the given figure and select the incorrect statement regarding it.
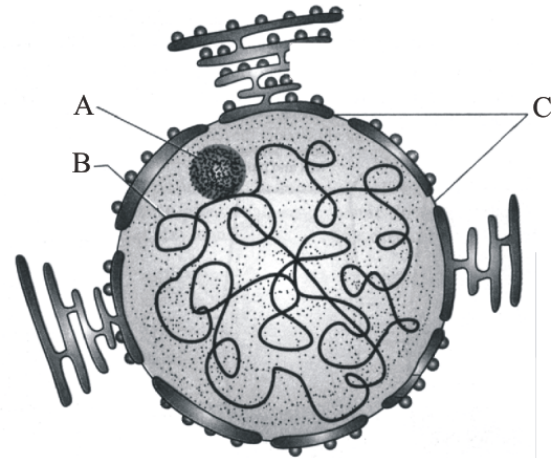
(i) A is the site of ribosome synthesis.

(ii) B transfer characteristics from parents to their offsprings.

(iii) C is the nuclear envelope with nuclear pore.

(iv) A contains DNA while B contains RNA.

(1) (i) and (ii)   (2) (i), (ii) and (iii)

(3) (ii) and (iii)   (4) (iv) only

44 Mitotic cell division occurs in

(1) germ cells   (2) In all somatic cells

(3) roots only   (4) shoots only

45 Look at the figure given below and identify the correct statement about A, B, C from picture.
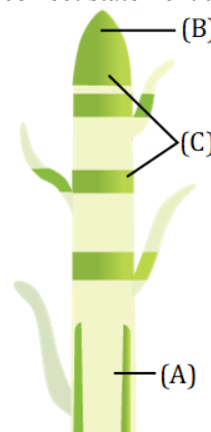
(1) A is involved in increasing the girth of the plant.

(2) B is responsible for elongation of internodes.

(3) C increases the length of shoot and root.

(4) A, B, C are examples of complex tissue.

46 Which one of the following organelles digests the old organelles that are no longer useful to the cells?

(1) Ribosomes   (2) Mitochondria

(3) Lysosomes   (4) Chromatin

47 _____ coined the term "cell".

(1) Robert brown   (2) Robert Hooke

(3) Leeuwenhoek   (4) Schwann

48 Robert Hooke published the discovery of the cell in his book -

(1) The origin of life

(2) The physical basis of life

(3) Micrographia

(4) None of these

MATHEMATICS

This section contains 12 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct.There are 4 marks each for correct answer and –1 for each incorrect answer.

49 In figure, lines XY and MN intersect at O. If $\angle POY = 90°$ and a: b = 2 : 3. Find c.
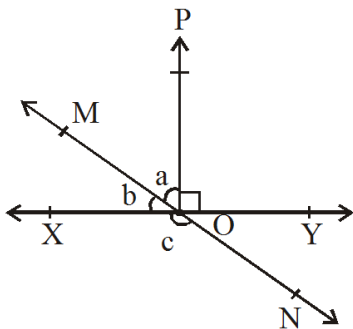
(1) 18°   (2) 36°

(3) 54°   (4) 126°

50 The numerator of a fraction is 3 less than the denominator. If 7 is added to the numerator, the value of the fraction increases by 1. Assuming the numerator to be x form an equation, then find the fraction.

(1) $\dfrac{1}{7}$ (2) $\dfrac{2}{7}$

(3) $\dfrac{3}{7}$ (4) $\dfrac{4}{7}$

51 A school has strength of 2000 students. The following pie chart shows the interests of students in different subjects. The number of students interested in Maths is
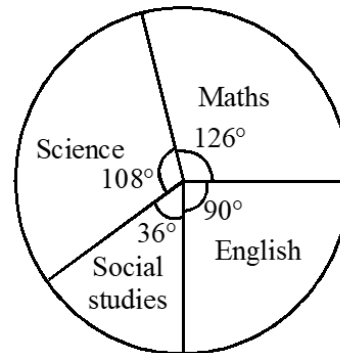
(1) 700   (2) 200

(3) 600   (4) 500

52 In figure, PQRS is a rhombus in which the diagonal 'PR' is produced to T. If $\angle SRT = 152°$, find x and z respectively.
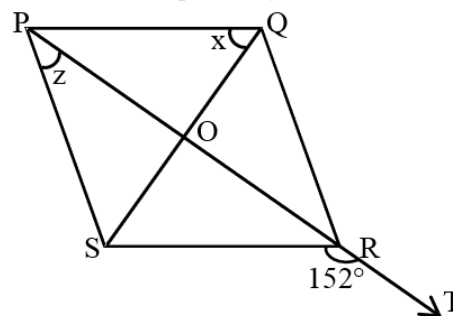

(1) 62°, 28°   (2) 28°, 62°

(3) 124°, 28°   (4) None of these

53 A sum of Rs. 2500 is invested for 2 years at 20% per annum, interest compounded half-yearly. Find the compound interest.

(1) Rs. 3660.25   (2) Rs. 1660.25

(3) Rs. 1160.25   (4) Rs. 1330

54 A and B started the business by putting Rs.12000 and Rs.16000 respectively, and after 8 months C also joined 15,000 rupees. What is the share of C from the benefit of Rs 45,600 after 2 years?

(1) Rs. 12000   (2) Rs. 12500

(3) Rs. 11500   (4) Rs. 11000

55 Simplify : $\dfrac{(52)^3 - (42)^3}{52 \times 52 + 52 \times 42 + 42 \times 42}$.

(1) 10   (2) 20

(3) −10   (4) −20

56 A plot of land is in the shape of a right angled isosceles triangle. The length of the hypotenuse is 50 m. The cost of fencing it at Rs. 3 per metre will be

(1) less than Rs. 300

(2) less than Rs. 400

(3) more than Rs. 500

(4) more than Rs. 600

57 In fig, if chords AB and CD of the circle intersect each other at right angles, then find x + y.
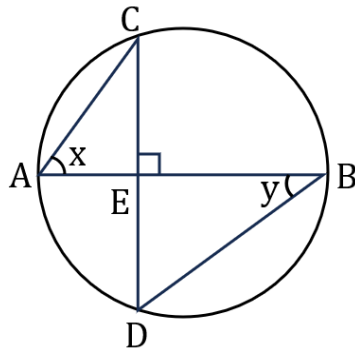
(1) 45°   (2) 60°   (3) 75°   (4) 90°

58 A dome of a building is in the form of a hemisphere. From inside, it was white washed at the cost of ₹ 997.92. If the cost of white washing is 400 paise per square metre, then find the volume of air inside the dome. $\left(\text{Take } \pi = \dfrac{22}{7} \right)$

(1) 83.16 m³   (2) 523.90 m³

(3) 425.20 m³   (4) None of these

59 The polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ when divided by $(x - 4)$ leaves remainders R_1 and R_2 respectively then value of a if $2R_1 - R_2 = 0$, is

(1) $-\dfrac{18}{127}$ (2) $\dfrac{18}{127}$

(3) $\dfrac{17}{127}$ (4) $-\dfrac{17}{31}$

60 If A(2, 2), B(−4, −4), C(5, −8) are the vertices of any triangle, the length of median passing through C will be :

(1) $\sqrt{65}$ units   (2) $\sqrt{117}$ units

(3) $\sqrt{85}$ units   (4) $\sqrt{113}$ units

ALLEN DIGITAL
OBJECTIVE

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A.	3	4	2	2	1	1	3	3	3	2	3	4	1	4	2	4	2	2	4	3
Q.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A.	2	2	3	1	4	4	2	4	3	3	3	4	2	1	4	1	1	3	2	3
Q.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A.	4	1	4	2	1	3	2	3	4	4	1	1	3	1	1	3	4	2	2	3

9610WPF801029240007	*Your Hard Work Leads To Strong Foundation*	Open