SET
(Spectrum Entrance Test)

for Students Presently in Class 07th

Spectrum
gateway to success

SPECTRUM ENTRANCE TEST

TEST BOOKLET CODE : A

PAPER CODE : 2401

Class: VII
Time: 90 Min. (11:00 AM to 12:30 PM)

Date:
Max. Marks: 180

INSTRUCTIONS

1. The question paper contains **60** questions in three parts
   (Part A : Mathematics, Part B : Mental Ability, Part C: Science

   Part A contains 25 questions, Part B contains 25 questions and Part C contains 10 questions.

   Each question has four options A, B, C & D, out of   which **only one option is correct.**

   Each question carries **+3 marks** for correct answer and **-1 mark** for wrong answer.

   Please ensure that the Question Paper you have received contains all the QUESTIONS and Pages. If you found some mistake like missing questions or pages then contact immediately to theInvigilator.

2. Indicate the correct answer(s) for each question by filling appropriate bubble(s) in your OMR sheet.

3. Use only Black / Blue ball point pen for darkening the bubble(s).

4. Use of Calculator, Log Table, Slide Rule and Mobile is not allowed.

5. For example if only '**B**' choice is correct then, the correct method for filling the bubble is

A	B	C	D
◯	●	◯	◯

   The answer of the question in any other manner (such as putting ⊘ , cross ⊗, or partial shading ◕ etc.)will be treated as wrong.
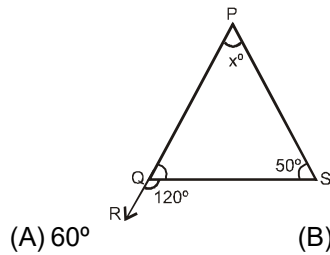
PART A: MATHEMATICS

Q.1 to Q.25 has four choices (A), (B), (C), (D) out of which only **ONE** is correct.

1. $25 \times (-5) \times (-4) \times (-20) = \underline{\hspace{2cm}}$
   (A) 1000   (B) −10,000   (C) −1000   (D) 10,000

2. If $3\frac{2}{5} = 3 + x$, then x equals :

   (A) $\frac{3}{5}$ (B) $\frac{1}{5}$ (C) $\frac{2}{5}$ (D) $3\frac{2}{5}$

3. Samon travelled 5 km 52 metre by bus, 2 km 265 metre by car and the rest 1 km 30 metre he walked. Total distance travelled by him is :
   (A) 8.347 km   (B) 8.000 km   (C) 8.925 km   (D) 9.000 km

4. The numbers 35, 105, 385 are divisible by :
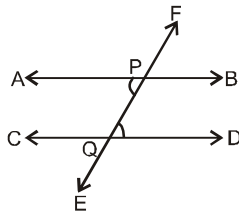   (A) 5   (B) 7   (C) both 5 & 7   (D) None of these

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5. Measure of x° in the given figure is :

(A) 60º   (B) 70º   (C) 80º   (D) 55º

6. A triangle can have at the most _____ obtuse angle (s).
(A) 1   (B) 2   (C) 3   (D) none

7. If length of a rectangle is doubled and breadth is halved, then the area of the rectangle_____
(A) becomes 2 times   (B) becomes half   (C) remains same   (D) becomes 4 times

8. Rakesh bought a CD for Rs 750 and sold it for Rs 875. Find his gain percent.

(A) $16\dfrac{1}{5}\%$ (B) $16\dfrac{2}{5}\%$ (C) $16\dfrac{1}{3}\%$ (D) $16\dfrac{2}{3}\%$

9. Value of a & b in the expression $\dfrac{7}{15}=\dfrac{35}{a}=\dfrac{-63}{b}$ is :
(A) a = 55 & b = – 120   (B) a = 75 & b = – 135   (C) a = 45 & b = – 75   (D) None of these

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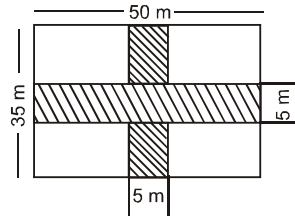
10. If $\dfrac{2x - 3/4}{9x + 4/7} = \dfrac{1}{4}$ then x =

(A) $\dfrac{25}{7}$ (B) $-\dfrac{25}{7}$ (C) $\dfrac{23}{7}$ (D) $-\dfrac{23}{7}$

11. The ratio of the income of Sita and Gita is 2 : 3. If Sita's income is Rs. 9000, then Gita's income is

(A) Rs. 13,500   (B) Rs. 6000   (C) Rs.12,000   (D) None of these

12. If $3(x + 5) + 16 = 5(x + 14) - 21$, then x =

(A) x = –8   (B) x = –7   (C) x = –6   (D) x = –9

13. If AB and CD are two parallel lines and EF is a transversal which cuts AB at P and CD at Q, then $\angle$ APQ and $\angle$ PQD are called –

(A) Corresponding angles   (B) Alternate angles

(C) Interior opposite angles   (D) Adjacent angles
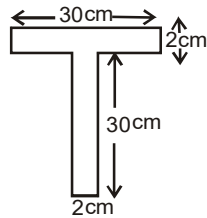

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14. The diagram given along side shows two paths drawn inside a rectangular field 50 metres long and 35 metres wide. The width of each path is 5 metres.
Find the area of the shaded portion.

(A) 400 m²   (B) 250 m²   (C) 175 m²   (D) 425 m²

15. The total cost of flooring a room at Rs 8.50 per square metre is Rs 510. If the length of the room is 8 metre, then its breadth is

(A) 50/4 m   (B) 60/8 m   (C) 70/5 m   (D) 25/4 m

16. By selling apples at the rate of Rs. $24\frac{1}{4}$ per kilogram, a fruit-seller gets Rs. 8536. How many kilogram of apples did he sell ?

(A) 252   (B) 312   (C) 352   (D) 432

17. If a = − 2, b = 3 and c = 4, then the value of $a^3 + b^3 + 3a^2c - 4bc^3$ is :

(A) 107   (B) − 107   (C) 701   (D) − 701

18. If $a = 2\frac{1}{2} \times 3\frac{1}{2}$ and $b = 3\frac{1}{2} \div 2\frac{1}{2}$ then

(A) a > b   (B) a < b   (C) a = b   (D) none of the above

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19. Perimeter of the given figure is

(A) 94 cm   (B) 124 cm   (C) 120 cm   (D) 96 m

20. Sum of $3xy$, $3yx$ and $4x^2y$ is

(A) $10x^2y$ (B) $10yx^2$ (C) $6xy + 4x^2y$ (D) $7xy + 3x^2y$

21. If $x : 6 : : 32 : 24$ then, what is the value of x ?

(A) 7   (B) 8   (C) 6   (D) 5

22. A marble tile measures 25 cm by 20 cm. To cover a wall of size 4 m by 3 m, then number of required tiles will be :

(A) 340   (B) 270   (C) 240   (D) 120

23. Two wires 15 cm and 25 cm in length are to be cut into smaller pieces of equal length. What can be maximum length of each smaller piece ?

(A) 4 cm   (B) 3 cm   (C) 5 cm   (D) 6 cm

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24. Arrange $\dfrac{-5}{21}, \dfrac{-12}{7}, \dfrac{7}{-7}$ in descending order :

(A) $\dfrac{-12}{7} > \dfrac{-5}{21} > \dfrac{7}{-7}$ (B) $\dfrac{7}{-7} > \dfrac{-5}{21} > \dfrac{-12}{7}$ (C) $\dfrac{-5}{21} > \dfrac{7}{-7} > \dfrac{-12}{7}$ (D) $\dfrac{-5}{21} > \dfrac{-12}{7} > \dfrac{7}{-7}$

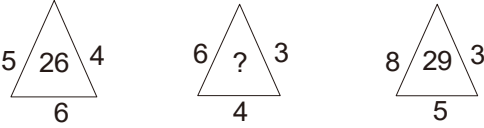**25.** The length and breadth of a rectangle are 20 cm and 15.5 cm. Calculate its perimeter.
(A) 50 cm   (B) 76 cm   (C) 71 cm   (D) 40 cm

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PART B: MENTAL ABILITY

Q.26 to Q.50 has four choices (A), (B), (C), (D) out of which only **ONE** is correct.

Direction (Q.26): Find the missing numbers :

26.

5 / 26 \ 4
6

6 / ? \ 3
4

8 / 29 \ 3
5

(A) 32 (B) 22 (C) 18 (D) 27

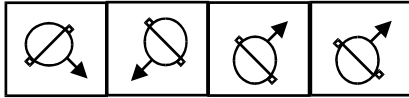**Directions (Q.27) :** Find the missing term :

27. 4, 8, 16, ? , 64
(A) 30 (B) 33 (C) 32 (D) 35

28. 'A' travelled Westwards 5 km, turned left and travelled 3 km, turned right and travelled 9 km. He then travelled North 3 km. How far was 'A' from the starting point now ?
(A) 3 kms (B) 5 kms (C) 14 kms (D) 10 kms

29. Choose the one word which can be formed from the letters of the given word.
RATIONALISATION
(A) NATIONALISTIC (B) NATIONALIST (C) SITUATION (D) REALISATION

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Direction (Q.30) : Find the mirror image –

30.

(X)

   (A)   (B)   (C)   (D)

31. If **black** means **white**, **white** means **red**, **red** means **yellow**, **yellow** means **blue**, **blue** means **green**, **green** means **violet**, and **violet** means **orange** what is the colour of the sky?

(A) Green   (B) Violet   (C) Orange   (D) Yellow

32. In the following list of numerals, how many 2's are followed by 1 but not preceded by 4 ?

4 2 1 2 1 4 2 1 1 2 4 4 4 1 2 2 1 2 1 4 4 2 1 4 2 1 2 1 2 4 1 4 2 1 2 4 1 4 6

(A) Two   (B) Three   (C) Four   (D) Five

33. Which letter will be the sixth to the right of the eleventh letter from the right end of the alphabet?
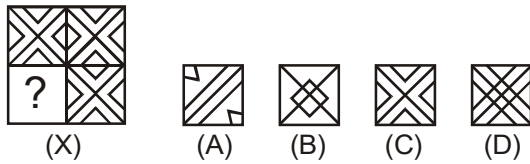
(A) K   (B) V   (C) J   (D) U

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34. Arrange the given words in the order they occur in dictionary.

    1. SIGN   **2.**   **SOLID**   **3. SCENE**   **4.**   **SIMPLE**

    (A) 3, 1, 2, 4   (B) 3, 1, 4, 2   (C) 3, 4, 1, 2   (D) 3, 4, 2, 1

Direction (Q.35): Select a figure from the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.
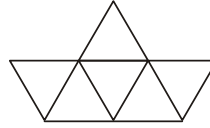
35.

    (X)   (A)   (B)   (C)   (D)

36. If 'x' means '÷' , '−' means 'x', '÷' means ' +' and '+' means '−' then what will be the value of

    (2 − 15 ÷ 18) × 8 + 6 = ?

    (A) 8   (B) 4   (C) 2   (D) 0

Direction : (Q.37) Which set of letters when placed at the gaps sequentially shall complete the series?
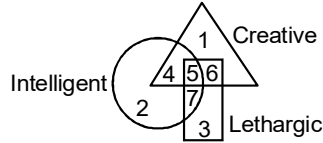
37. k _ mk _ lmkkl _ kk _ mk.

    (A) lklm   (B) lkmk   (C) lkmm   (D) lkml

38. In a certain code **721** means **good college life**, **526** means **you are good** and **257** means **life are good**. Which digit stands for **you** in the code ?

    (A) 6   (B) 5

    (C) 7   (D) Cannot be determined

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39. How many triangles are there in given figure :

(A) 8   (B) 7   (C) 9   (D) 5

40. Refer to the given diagram and answer the following question :

Who are intelligent as well as lethargic but not creative persons ?

(A) 4   (B) 5   (C) 6   (D) 7

41. I have a few sweets to be distributed. If I keep 2, 3 or 4 in a pack, I am left with one sweet. If I keep 5 in a pack, I am left with none. What is the minimum number of sweets I can have to pack and distribute ?

(A) 25   (B) 37   (C) 54   (D) 65

42. Anil and Sunil are ranked seventh and eleventh respectively from the top in a class of **31** students. What will be their respective ranks from the bottom in the class ?

(A) 20th and 24th   (B) 24th and 20th   (C) 25th and 21st   (D) 26th and 22nd

43. In the following series how many **Cs** are there which are immediately followed by **'Y'** but not immediately preceded by **'J'** ?

J C D Y J C Y O J H C Y Y Y C I J W C Y A C Y

(A) one   (B) two   (C) three   (D) four

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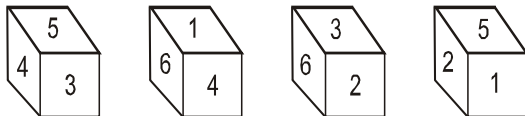
44. In a code language

'MAKE' = △ ○ X □

'RACE' = ⬠ ○ ⍟ □

Then in the same code language 'KARM' = ?

(A) △X⬠○　　　　(B) ⬠△XO　　　　(C) XO⬠△　　　　(D) △⬠XO

Directions (Q.45 to Q.47): Four positions of the same dice have been shown. Select the alternative which provides correct answer to the question asked.

45. Which number would be opposite to 3 ?
(A) 1　　　　(B) 4　　　　(C) 5　　　　(D) 6

46. Which number would be opposite to 5 ?
(A) 2　　　　(B) 3　　　　(C) 4　　　　(D) 6

47. Which number would be opposite to 4 ?
(A) 2　　　　(B) 3　　　　(C) 4　　　　(D) 6

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48. Manan is taller than Vedant. Pavan is not tall as Manan. Ohm is taller than Pavan but not as tall as Manan. Who is the tallest among them.

(A) Manan   (B) Vedant   (C) Pavan   (D) Ohm

49. Which is the fourth letter just after the middle letter in
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S -

(A) F   (B) L   (C) K   (D) N

50. If 'x' means '+', 'y' means '–', 'z' means '÷' and 'p' means 'x' then (6 p 4) z 6 y 5 = ?

(A) 5   (B) 10   (C) –1   (D) 20

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PART C : SCIENCE

Q.51 to Q.60 has four choices (A), (B), (C), (D) out of which only **ONE** is correct.

51. Rear view mirror used in vechiles is :
   (A) concave   (B) convex   (C) Plane   (D) All of these

52. ⊣|||⊢ this symbol represents -

   (A) Switch   (B) Blub   (C) Battery   (D) Cell

53. When is an object said to be in motion ?

   (A) If object changes its position with time is said to be in motion

   (B) If object position does not change with time is said to be in motion

   (C) Both (A) and (B)

   (D) None of these

54. During all changes (physical or chemical) mass is -
   (A) gained   (B) conserved   (C) lost   (D) can be gained or lost

55. A base reacts with an acid to form salt and water. What is this reaction called ?
   (A) Oxidation reaction   (B) Neutralisation reaction
   (C) Reduction reaction   (D) Ionisation reaction

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56. We got _____ from seas and oceans .
(A) mineral water   (B) chlorinated water   (C) saline water   (D) distilled water

57. During heavy exercise, we get cramps in the legs due to the accumulation of
(A) Carbon dioxide   (B) Lactic acid   (C) alcohol   (D) water

58. Iodine is used to test the presence of _____ in the food.
(A) Proteins   (B) Carbohydrates   (C) Starch   (D) Fats

59. Tomato is a
(A) stem   (B) root   (C) fruit   (D) leaf

60. A phenomenon due to which heat is trapped in the atmosphere is -
(A) green house effect   (B) fractional distillation
(C) nitrogen cycle   (D) decomposition

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Answer Key

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