X/13/M (Spl)

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MATHEMATICS

(Special)

Full Marks : 100
Pass Marks : 30

Time : 3 hours

(Lower grade Mathematics for candidates with specific
learning disabilities)

*The figures in the margin indicate full marks
for the questions*

GENERAL INSTRUCTIONS :

   (i)   All questions are compulsory.

  (ii)   The question paper consists of 35 questions divided into four Sections A, B, C and D. Section—A contains 10 questions of *1* mark each, Section—B is of 10 questions of *2* marks each, Section—C is of 10 questions of *4* marks each and Section—D is of 5 questions of *6* marks each.

 (iii)   In Question Nos. **1** to **7** of Section—A, there are four answers marked (A), (B), (C), (D). Only one of these answers is correct. The letter indicating the correct answer should be written in capital in the answer book.

 (iv)   There is no overall choice. However, an internal choice has been provided in two questions of *2* marks each, two questions of *4* marks each and two questions of *6* marks each.

  (v)   Please write down the serial number of the question before attempting it.

 (vi)   Use of Calculator/Mobile Phone is not permitted.

                         [P.T.O.

SECTION—A

(*Marks* : 10)

(*Question Nos. **1** to **10** carry 1 mark each*)

1. The value of $\dfrac{1}{6} \quad \dfrac{5}{6}$ is

   (A)   0

   (B)   1

   (C)   5

   (D)   6

2. If x is a rational number, a and b are integers, then the value of $x^a \quad x^b$ is

   (A) x^{ab}

   (B) $x^{\frac{a}{b}}$

   (C) $x^{a\ b}$

   (D) $x^{a\ b}$

3. Which of the following is not a rational number?

   (A) $\dfrac{5}{0}$

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

   (C)   6

   (D) $\dfrac{1}{3}$

4. The circumference of a circle with radius 35 cm is

   (A) 22 cm

   (B) 35 cm

   (C) 70 cm

   (D) 220 cm

5. The perimeter of a square is 36 cm. The length of its side is

   (A) 4 cm

   (B) 9 cm

   (C) 36 cm

   (D) 81 cm

6. The decimal representation of $\frac{83}{10}$ is

   (A) 0·083

   (B) 0·83

   (C) 8·3

   (D) 83

7. 1% of 300 is

   (A) 0·3

   (B) 3

   (C) 30

   (D) 300

8. State whether the following statements are *True* or *False* :

½×2=1

   (a) The product of two integers of same (like) signs is a negative integer.

   (b) The absolute value of 3 and –3 are written as |3| and is equal to 3.

9. Fill in the blanks : ½×2=1

   (a) Loss = Cost price – ——

   (b) Simple interest = Amount – ——

10. Define sample space.

SECTION—B

(*Marks* : 20)

(*Question Nos.* **11** *to* **20** *carry 2 marks each*)

11. Express the ratio 40 : 50 in the lowest form.

12. Find the value of 36 791 100.

13. Convert into power notation of $\frac{1}{27}$.

Or

Simplify 5^7 5^5

14. Find the simple interest on Rs 1,200 at the rate of 12% p.a. for 3 years.

15. Convert 0·27 into percentage.

16. The area of a rectangular lawn is 255 m^2. If its length is 15 m, find its breadth.

17. Add $\frac{7}{8}$ $\frac{1}{2}$.

18. Find the diameter of the circle whose circumference is 396 m. (Use $\frac{22}{7}$)

Or

Find the circumference of the circle whose diameter is 20 cm. (Use $\frac{22}{7}$)

19. Find the mean of the group 32, 30, 25, 23, 30 and 28.

20. Simplify (20) 25 (10).

SECTION—C

(*Marks* : 40)

(*Question Nos.* **21** *to* **30** *carry 4 marks each*)

21. Find the operator and write two more terms of

$$4, 2, 1, \tfrac{1}{2}, \ldots$$

22. A bridge is to be constructed in three phases. $\frac{2}{9}$ part of the bridge was completed in phase–I and $\frac{5}{14}$ in phase–II. How much part of the bridge remains to be completed in phase–III?

23. The ratio of boys and girls attending a school assembly is $7 : 8$. If there are 640 girls in the assembly, how many boys are there?

Or

In 3 hours, a train covers 195 km. Travelling at the same speed, what distance would the train cover in 5 hours?

24. Simplify :

$$\frac{4}{10} \quad \frac{13}{15} \quad \frac{9}{50}$$

25. Express the following rational numbers in the simplest form :

2+2=4

(a) $\dfrac{7}{84}$

(b) $\dfrac{24}{36}$

26. The length of a rectangular hallway is 3 times its breadth. If the perimeter of the hallway is 48 m, find its length and breadth.

27. Lolit got 50% marks in Hindi, 75% marks in English and 90 marks in Mathematics. The maximum marks in each of the subjects were 100, 140 and 160 respectively. Find his aggregate percentage.

28. The selling price of 10 pencils is equal to the cost price of 11 pencils. Find the profit percent.

29. The population of a village was 75000 in 1990. In 2000, the population becomes 93000. What is the increase percent during these 10 years?

[Contd.

30. Six friends were deciding to go during the coming weekend. Everyone wrote their intentions on a slip of paper to show their choice.

| Fishing | , | Boating | , | Water Park | ,

| Cricket Match | , | Cricket Match | , | Cinema |

Write the probability of the following :   1+1+1+1=4

(a)   *P* (Water Park)

(b)   *P* (Fishing)

(c)   *P* (Cricket Match)

(d)   *P* (Cinema)

Or

Define the following :   2+2=4

(a)   Range

(b)   Mode

SECTION—D

(*Marks* : 30)

(*Question Nos.* **31** *to* **35** *carry 6 marks each*)

31. Arrange $\dfrac{7}{10}, \dfrac{2}{5}, \dfrac{11}{15}, \dfrac{1}{6}$ and $\dfrac{17}{30}$ in descending order.

32. Construct a bar graph to display the preference of students for soft drinks in a class are given below :

Soft drinks	Orange juice	Cola	Lime juice	Mango juice	Melon juice
No. of students	15	13	9	7	11

Or

A lawn is 80 m long and 60 m wide. There is a swimming pool of dimension 20 m 6 m in this lawn. What will be the cost of putting grass in the remaining part of the field at Rs 30 per square metre?

33. To make fence around a circular garden, the total cost is Rs 26,400 at the cost of Rs 50 per metre. Find the radius of the circular garden. (Use $\frac{22}{7}$)

34. A 1·5 m wide footpath runs all along the fence outside a park 40 m long and 30 m wide. What is the perimeter of the fence and what is the area of the footpath?

Or

In a circular garden of diameter 150 m, a pond is constructed in the form of a circle with radius 20 m. Find the area of the land left out. (Use 3 14)

35. A property of worth Rs 2,80,000 was shared among three brothers in the ratio 3 : 4 : 7. How much worth of property did each received?

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