Total No. of Printed Pages—12

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MATHEMATICS

(Special)

(Lower Grade Mathematics for Candidates with Special Learning Disabilities)

(CANDIDATES WITH PRACTICALS/INTERNAL ASSESSMENT)

Full Marks : 80

Pass Marks : 24

(NON-REGULAR, PRIVATE AND COMPARTMENTAL CANDIDATES WITHOUT PRACTICALS/ INTERNAL ASSESSMENT)

Full Marks : 100

Pass Marks : 30

Time : 3 hours

(FOR BOTH CATEGORIES OF CANDIDATES)

The figures in the margin indicate full marks for the questions

General Instructions :

(i) The Question Paper consists of 32 questions divided into six Sections A, B, C, D, E and F.

(ii) Question Nos. **1** to **30** (Section—A to Section—E) are to be answered by all the **Candidates**.

(iii) Question Nos. **31** and **32** of Section—F are to be answered only by the **Candidates without Practicals/Internal Assessment**.

(iv) Section—A contains 8 questions of 1 mark each.
Section—B contains 7 questions of 2 marks each.
Section—C contains 8 questions of 3 marks each.
Section—D contains 4 questions of 4 marks each.
Section—E contains 3 questions of 6 marks each.

(v) In Question Nos. **1** to **7** of Section—A and Question No. **31** sub Nos. *(a)* to *(d)* of Section—F, there are four answers marked (A), (B), (C) and (D). Only one of these answers is correct. The letter indicating the correct answer should be written in capital in the answer book.

(vi) Use of electronic device is not permitted.

SECTION—A

(*Marks* : 8)

(*Question Nos.* ***1*** *to* ***8*** *carry 1 mark each*)

1. The product of any non-zero integer and its reciprocal gives the result as

(A) 0

(B) 1

(C) –1

(D) 2

(Choose the correct option)

2. A fraction where the numerator is less than the denominator is called

(A) proper fraction

(B) improper fraction

(C) mixed fraction

(D) unit fraction

(Choose the correct option)

3. An equivalent rational number of $-\frac{3}{7}$ is

(A) $\frac{6}{14}$

(B) $\frac{-3}{14}$

(C) $\frac{-6}{14}$

(D) $\frac{-9}{14}$

(Choose the correct option)

4. The value of $0{\cdot}84 \div 8$ is

(A) 1·05

(B) 10·5

(C) 0·0105

(D) 0·105

(Choose the correct option)

5. The exponential form of $a \times a \times a \times p \times p \times p \times p$ is

(A) a^3p^4

(B) a^4p^3

(C) a^3p^3

(D) a^4p^4

(Choose the correct option)

6. The charge paid on the borrowed money is known as the

(A) principal

(B) interest

(C) amount

(D) selling price

(Choose the correct option)

7. If the length of a square is 8 m, then its area is

(A) 8 m

(B) 32 m

(C) 64 m^2

(D) 256 m^2

(Choose the correct option)

8. State whether the following statements are True or False : ½×2=1

(a) Mode is the middle value of a data when arranged in an order.

(b) Data is a collection of numerical values that convey some information.

SECTION—B

(*Marks* : 14)

(*Question Nos.* ***9*** *to* ***15*** *carry 2 marks each*)

9. Subtract $\frac{-7}{9}$ from $\frac{4}{6}$.

10. Multiply the decimal numbers 8·36 × 4·8.

11. Express 2048 as the product of exponents using prime factorization.

Or

Simplify : $\left(\frac{2p^6q}{8p^2q^6}\right)^2$

12. Are the numbers 4, 3, 8 and 6 in proportion?

13. Convert the ratio 6 : 25 into a percentage.

14. Find the simple interest when principal = ₹ 4,800, rate of interest (p.a.) = 6% and time = 1 year.

15. Find the perimeter of the parallelogram whose length is 12 cm and breadth is 7 cm.

Or

Find the circumference of the circle whose radius is 22·5 m (take value of π as 3·14).

SECTION—C

(*Marks* : 24)

(*Question Nos.* ***16*** *to* ***23*** *carry 3 marks each*)

16. The product of two integers is –51. If one integer is –17, find the other.

17. Multiply the fractions $3\frac{1}{2} \times \frac{3}{7} \times \frac{5}{4}$.

18. Find the sum of $\frac{7}{-18}$ and $\frac{8}{27}$.

19. The cost of 1 metre cloth is ₹ 60·43. What will be the cost of 8·5 meters of cloth?

Or

Watbor made 4 trips to visit his grandmother. He drove 232·92 km in all. How many kilometers did Watbor drive on each trip?

20. Find the volume of the cube whose side is 2·5 m.

21. Find the value of x in the proportion $524 : 2 :: x : 10$.

22. What percent of 92 is 46?

Or

Olari purchased a bag for ₹ 5,000 and sold it for ₹ 6,000. Find his profit % or loss %.

23. Find the mode for the following data :

45, 50, 50, 48, 46, 47, 45, 48, 50, 48, 48

SECTION—D

(*Marks* : 16)

(*Question Nos.* ***24*** *to* ***27*** *carry 4 marks each*)

24. Banri arranged 15 roses in a vase, out of which $\frac{3}{5}$ are red. Find the number of red flowers arranged in the vase.

Or

Karalin reads $\frac{1}{5}$ of a book in one hour. How much part of the book will she read in $2\frac{1}{5}$ hours?

25. Tiplem and Embhah won a cash prize, which they agreed to share in the ratio of 5 : 3. If Tiplem received ₹ 1,250, how much did Embhah receive?

26. Find the principal when time = 3 years, simple interest = ₹ 600 and rate of interest = 4% per annum.

27. A boy rolls a wheel of diameter 21 cm on a straight path. Find the distance covered by the wheel after 45 revolutions. (Use $\pi = \frac{22}{7}$)

Or

Find the diameter of the circle whose circumference is 35·8 m. (Take value of π as 3·14)

SECTION—E

(*Marks* : 18)

(*Question Nos.* ***28*** *to* ***30*** *carry 6 marks each*)

28. Arrange the rational numbers $\frac{4}{9}, \frac{-4}{3}, \frac{-7}{-12}, \frac{-11}{24}$ in the descending order.

29. If the area of a ring is 147π cm^2 and the radius of the bigger circle is 2 times the radius of the smaller circle, find the radii of both the circles.

Or

Find the diameter of the circle whose area is 706·5 m^2. (Round off the decimal to the nearest integers and use $\pi = \frac{22}{7}$).

30. A die is rolled 200 times. Find the probabilities of 2, 4 and 5 outcomes using the information given in the table :

1	2	3	4	5	6
25	36	34	28	33	44

Or

Given below is the data of outdoor games liked by 100 girls :

Games	*Throwball*	*Volleyball*	*Basketball*	*Cricket*
Girls	35	10	20	20

Represent the data using a bar graph.

SECTION—F

(*Marks* : 20)

(*Question Nos.* ***31*** *and* ***32*** *are for* **Candidates appearing for 100 marks**)

31. Answer the following as directed (any *eight*) : 1×8=8

(a) Counting numbers 1, 2, 3, 4 and so on are called

(A) whole numbers

(B) natural numbers

(C) integers

(D) composite numbers

(Choose the correct option)

(b) The reciprocal of $\frac{12}{15}$ is

(A) $\frac{15}{12}$

(B) $\frac{-15}{12}$

(C) $\frac{12}{15}$

(D) $\frac{-12}{15}$

(Choose the correct option)

(c) The denominator of the rational number $\frac{7}{-8}$ is

(A) 8

(B) –8

(C) 7

(D) –7

(Choose the correct option)

(d) The value of $0{\cdot}9 \times 1{\cdot}3$ is

(A) 0·117

(B) 0·0117

(C) 11·7

(D) 1·17

(Choose the correct option)

(e) Simplify $5^3 \times 5^5 \times 5^7$ using laws of exponents.

(f) Express the ratio 39 : 51 in the simplest form.

(g) Selling Price – Cost Price = _____.

(Fill in the blank)

(h) The perimeter of a square of side '*a*' units is given by $4a$ units.

(State True or False)

(i) Define Secondary data.

(j) Multiply the fraction $\frac{3}{5} \times \frac{5}{6}$.

(k) Find the value of 10^3.

(l) The price at which an item is sold is known as the selling price of the item.

(State True or False)

32. Answer any *six* from the following : 2×6=12

(a) Evaluate : $(-1) \times (-5) \times (-4) \times (-6)$.

(b) Divide $\frac{5}{9} \div \frac{45}{36}$.

(c) Simplify : $\frac{5}{-18} \times \frac{-9}{20}$

(d) Convert 4·63 m into centimeter.

(e) Express 64^{-3} as an exponent with base 4.

(f) 24 bags of washing powder weigh 108 kg. Find the weight of 52 same bags.

(g) Convert 195% into a fraction.

(h) Find the time when principal = ₹ 150, simple interest = ₹ 450 and rate of interest = 5% per annum.

(i) Find the corresponding base of the triangle whose area is 127·5 m^2 and height is 17 m.

(j) Define sample space.

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