



M-CAT GRAND FINALE

Sample Paper

(Based on the new exam pattern)



TOTAL MARKS
100



QUESTIONS
50



DURATION
60 mins

Instructions for Student:

- Read the question carefully before answering.
- Each question has 4 options (A, B, C & D).
- Choose one correct option as your answer from the 4 options.
- **New Exam Pattern:**
 1. Each question will carry 1, 2, or 4 marks, depending on its difficulty level.
 2. **Negative Marking:** Additional marks will be deducted for every incorrect answer (0.25 marks for a 1-mark question, 0.5 marks for a 2-mark question, and 1 mark for a 4-mark question).
 3. The Assessment Round score will be included in the Grand Finale score using a weighted average method. 30% of the Assessment Round and 70% of the Grand Finale score.
 4. New Method to Calculate Marks for Grand Finale Awards.

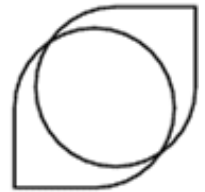
	Assessment Round	Grand Finale
Actual Marks	60	80
Weightage	30%	70%
Marks After Weighted Average Rule	$60 \times 30/100 = 18$	$80 \times 70/100 = 56$
Final Marks for Grand Finale Awards	$18 + 56 = 74$	

- On the answer sheet blacken the correct option against the corresponding question number.
- **Use pencil to mark your answer.**
- If you wish to change your answer, erase the previous mark completely.

All The Best !

SECTION 1: Concept Check

1. If the numerator is more than the denominator, then the fraction is called as _____. (1m)
 - a. Like Fraction
 - b. Improper Fraction
 - c. Proper Fraction
 - d. Unit Fraction
2. Fill in the blank: An equilateral triangle _____. (1m)
 - a. has three equal sides
 - b. has three equal angles
 - c. is an acute angled triangle
 - d. All of these
3. 6477480 is divisible by _____. (1m)
 - a. 2
 - b. 3
 - c. 6
 - d. All of these
4. How many horizontal lines of symmetry does the figure given alongside have? (1m)
 - a. 0
 - b. 1
 - c. 2
 - d. None of these
5. Find the greatest number which divides 143 and 33 exactly. (1m)
 - a. 10
 - b. 11
 - c. 12
 - d. 13
6. Which is the smallest four-digit number formed using all the digits 6, 3, 1 and 0 only once? (1m)
 - a. 1306
 - b. 1036
 - c. 0136
 - d. 6310
7. Arrange the following decimals in ascending order of value: 0.4213, 0.4312, 0.4321, & 0.4132 (1m)
 - a. $0.4213 < 0.4312 < 0.4321 < 0.4132$
 - b. $0.4132 < 0.4213 < 0.4312 < 0.4321$
 - c. $0.4132 < 0.4312 < 0.4213 < 0.4321$
 - d. $0.4312 < 0.4213 < 0.4321 < 0.4132$
8. What is the difference between the greatest and the smallest 7-digit number? (1m)
 - a. Eight million nine hundred and ninety-nine thousand nine hundred and ninety-nine.
 - b. Eighty-nine crore ninety-nine lakh nine hundred and ninety-nine.
 - c. Eight hundred and ninety-nine thousand nine hundred and ninety-nine.
 - d. Nine million nine hundred ninety-nine.



9. Compare the following two numbers: 43,29,52,280 _____ 432,925,280 (1m)

- a. >
- b. <
- c. =
- d. None of these

10. Find the volume of a cube of edge 20 cm. (1m)

- a. 4000 cu. m
- b. 8000 cu. cm
- c. 4000 cu. cm
- d. 8000 cu. m

SECTION 2: Applied Mathematics

11. Find the value of $(35\% \text{ of } 400) + (\frac{3}{4} \text{ of } 320) =$ _____ (2m)

- a. 340
- b. 357
- c. 368
- d. 380

12. The sum of a set of 7 numbers is 16604. If another number 124 is also included in this set, what is the average of the new set of numbers? (2m)

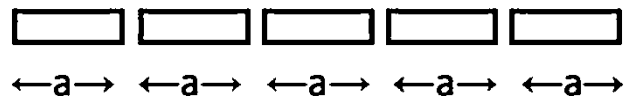
- a. 2091
- b. 2074
- c. 2081
- d. 2088

13. The product of two numbers is 336. If HCF of the numbers is 2, then find the LCM of the numbers. (2m)

- a. 246
- b. 144
- c. 168
- d. 173

14. What is the total length represented by the given figure, in terms of a? (2m)

- a. $5 + a$
- b. $a - 5$
- c. $5a$
- d. $5/a$



15. Which number should come in the blank? (2m)

$$49 \div 7 + 10 - 7 = 36 \div \underline{\quad} \times 5$$

- a. 18
- b. 16
- c. 14
- d. 12

16. Multiply the shaded portion of the given figures: (2m)

- a. 35
- b. 0.035
- c. 0.35
- d. 3.5

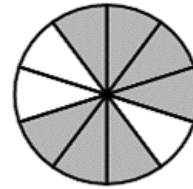


Figure 1

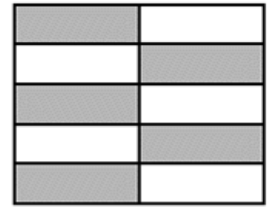


Figure 2

17. Solve the expression using the BODMAS rule: $\left(\frac{1}{3} + \frac{5}{3}\right) - 5 + 3$ (2m)

- a. 0
- b. 1
- c. -1
- d. 2

18. Simplify: $120t - 30 - 34t + 54 - 2(43t + 12)$ (2m)

- a. 0
- b. $12t$
- c. 12
- d. None of these

19. What is the value of $\frac{8}{5} \times 75 + 20 - \left(\frac{18}{3}\right)$? (2m)

- a. 125
- b. 134
- c. 146
- d. 153

20. Which of the following is a list of equivalent fractions? (2m)

- a. $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}$
- b. $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}$
- c. $1\frac{1}{2}, 1\frac{1}{3}, 1\frac{1}{4}, 1\frac{1}{5}$
- d. $\frac{8}{7}, \frac{8}{6}, \frac{8}{5}, \frac{8}{4}$

SECTION 3: Case-Based Mathematics

21. Which of these could be represented by the expression ' $A - 5$ '? (2m)

- a. Ishan is 5 times as old as Sanjit. If Sanjit's age is A years, how old is Ishan?
- b. Tarun is 5 years younger than Anny. If Anny's age is A years, how old is Tarun?
- c. Naman is one-fifth as old as Aman. If Naman's age is A years, how old is Aman?
- d. Geet is 5 years older than Suhana. If Suhana's age is A years, how old is Geet?

22. Rahul runs a small electronics shop. He purchases a smartphone for ₹ 5,400 and sells it to Amit for ₹ 6,300. What is the profit percentage earned by Rahul on the sale? (2m)

- a. Profit of 9%
- b. Profit of 16.67%
- c. Loss of 6.67%
- d. Loss of 3.4%

23. If 14 men construct a wall in 5 days, in how many days will 2 men be able to construct the wall? (2m)
- 70 days
 - 35 days
 - 5 days
 - 10 days
24. A cake weighing 3.5 kg was divided equally amongst 50 guests at a birthday party. What will be the share of each person? (2m)
- 0.7 kg
 - 0.07 kg
 - 7 kg
 - 0.007 kg
25. Hari runs at a speed of 20 km/hr. How far will he run in 2.5 hours? (2m)
- 50 km
 - 60 km
 - 12 km
 - 10 km
26. What is the amount received if ₹ 12000 is invested at 6% p.a. simple interest for 4 years? (2m)
- ₹ 12400
 - ₹ 14880
 - ₹ 20400
 - None of these
27. A school has 806 desks to be placed in 26 classrooms. If the same number of desks are placed in each classroom, then how many desks will be there in each room? (2m)
- 31
 - 34
 - 42
 - 44
28. A computer is bought for ₹ 40000 and resold at 10% loss. What is its selling price? (2m)
- ₹ 34200
 - ₹ 36000
 - ₹ 42400
 - None of these
29. Seema has to buy rose saplings to plant in her garden. What is the least number of rose saplings required so that there are either 24 or 30 rose saplings in each row? (2m)
- 24
 - 30
 - 100
 - 120
30. Amit rode his bike for 3.10 km on Friday and 4.2 km on Saturday. How many more kilometers did Amit cover on Saturday as compared to Friday? (2m)
- 1.50
 - 1.15
 - 1.10
 - 7.35

31. Raj's Diwali camp starts on 20th November, 2026. If the camp is 20 days long, then the camp will end on _____. (2m)

- 30th November, 2026
- 29th November, 2026
- 10th December, 2026
- 9th December, 2026

32. Khushi bought a set of 50 paper cups. If she used $\frac{1}{4}$ of the cups, then what percentage of the cups are left unused? (2m)

- 25%
- 30%
- 50%
- 75%

33. Choose the correct bill for the bill dated 12th September 2023 and numbered 567781 for the following items bought by Jack from J. K. Mart: (2m)

- Two bottles of cold drink for ₹ 45 each.
- 4 packs of paneer for ₹ 20 per pack.
- One loaf of bread for ₹ 75 per loaf.
- Three packs of chips for ₹ 40 per pack.

A. K. MART				
Bill No.: 567781		Date: 12/09/2023		
Sr. No.	Items	Qty	Rate	Amount (in ₹)
1	Cold Drink	2	₹ 45	₹ 90
2	Paneer	1	₹ 20	₹ 20
3	Bread	1	₹ 75	₹ 75
4	Chips	3	₹ 40	₹ 120
Total				₹ 285

a.

J. K. MART				
Bill No.: 567781		Date: 13/09/2023		
Sr. No.	Items	Qty	Rate	Amount (in ₹)
1	Cold Drink	3	₹ 45	₹ 90
2	Paneer	4	₹ 20	₹ 80
3	Bread	1	₹ 75	₹ 75
4	Chips	3	₹ 40	₹ 120
Total				₹ 365

b.

J. K. MART				
Bill No.: 567781		Date: 12/09/2023		
Sr. No.	Items	Qty	Rate	Amount (in ₹)
1	Cold Drink	2	₹ 45	₹ 90
2	Paneer	4	₹ 20	₹ 80
3	Bread	1	₹ 75	₹ 75
4	Chips	3	₹ 40	₹ 120
Total				₹ 365

c.

J. K. MART				
Bill No.: 567767		Date: 12/09/2023		
Sr. No.	Items	Qty	Rate	Amount (in ₹)
1	Cold Drink	2	₹ 45	₹ 90
2	Paneer	4	₹ 20	₹ 80
3	Bread	1	₹ 75	₹ 75
4	Chips	3	₹ 40	₹ 120
Total				₹ 365

d.

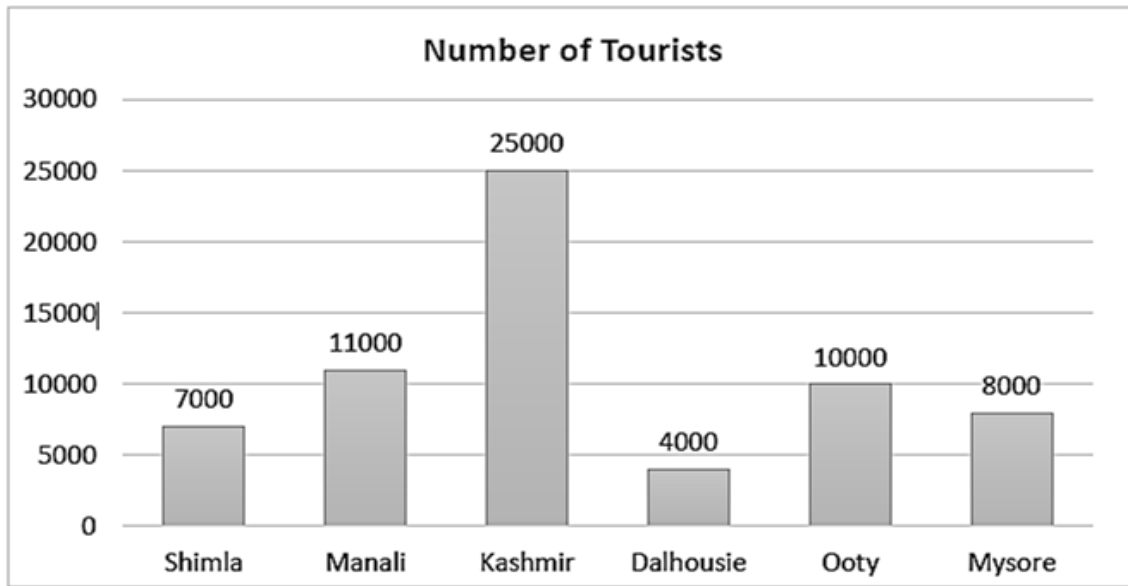
34. A school stall bought 5 storybooks for ₹ 80 each. It sold 4 books for ₹ 100 each. The last book was sold for ₹ 70 because its cover was slightly damaged.

What was the total profit or loss made by the stall? (2m)

- ₹ 50 profit
- ₹ 70 loss
- ₹ 70 profit
- ₹ 100 loss

Answer questions 35–38 based on the bar graph given below:

The bar graph represents the number of tourists visiting various hill stations during a summer holiday.



35. What is the difference between the number of visitors from the most population destination and the least popular destination? (2m)

- a. 19000
- b. 18000
- c. 21000
- d. 25000

36. Which of the following hill stations had less than 20000 tourists but more than 10000 tourists? (2m)

- a. Ooty
- b. Manali
- c. Dalhousie
- d. Kashmir

37. How many more tourists visited Manali as compared to Mysore? (2m)

- a. 3000
- b. 5000
- c. 7000
- d. 1000

38. What is the total number of tourists that visited Shimla or Dalhousie? (2m)

- a. 8000
- b. 9000
- c. 10000
- d. 11000

39. Kiara is decorating a square-shaped table. The area of the table is 64 cm^2 . She wants to put a decorative lace around the table. What is the length of the lace required? (2m)

- a. 64 cm
- b. 32 cm
- c. 16 cm
- d. 8 cm

40. A jacket originally costs ₹ x . During a sale, the shop gives a discount of ₹ 500. The customer pays ₹ 1,200. What was the original price? (2m)
- ₹ 700
 - ₹ 1,500
 - ₹ 1,700
 - ₹ 1,800
41. A school courtyard is rectangular and measures 24 m $\times$ 18 m. A square flower bed of side 6 m is constructed at one corner. The remaining area is to be covered with grass. What is the area covered with grass? (2m)
- 396 m²
 - 402 m²
 - 408 m²
 - 414 m²
42. A father is 4 times as old as his son. Their combined age is 50 years. Which equation can be used to find the son's age x ? (2m)
- $x + 4 = 50$
 - $4x = 50$
 - $x + 4x = 50$
 - $4(x + 1) = 50$
43. 5 shaving blades cost ₹ 600. A customer buys 15 blades. If the shopkeeper gives a discount of ₹ 50 on the total purchase, how much does the customer pay? (2m)
- ₹ 1,650
 - ₹ 1,750
 - ₹ 1,800
 - ₹ 1,850
44. Lucy is preparing a dessert that requires 270 g of sugar. She places an empty container on a weighing scale and finds that its mass is 80 g. She then adds sugar to the container. What should be the reading on the scale so that she gets the recipe correct? (2m)
- 270 g
 - 350 g
 - 190 g
 - 430 g
45. Four students measure the length of the same table. Their readings are: (2m)
- | | |
|----------------|---------------|
| Anu: 1.52 m | Ravi: 1.50 m |
| Simran: 1.51 m | Karan: 15.2 m |
- Whose reading is most likely incorrect?
- Anu's reading
 - Ravi's reading
 - Simran's reading
 - Karan's reading

SECTION 4: Challenger's Section

46. Consider the following statements: (4m)

1. A line segment is a part of a straight line with fixed length and two end points.
2. An angle is formed when two rays or straight lines meet.
3. The diameter of a circle is always half the length of its radius.
4. A shape is symmetrical if it cannot be divided into two or more identical pieces.

Which of the above statements is/are correct?

- a. 1, 2 and 3 only
- b. 1, 3 and 4 only
- c. 1 and 2 only
- d. 1, 2, 3 and 4

47. Study the following and select the CORRECT option. (4m)

P: The simple interest earned on a principal of ₹ 5,000 at 8% per annum for 2 years.

Q: The simple interest earned on a principal of ₹ 4,000 at 10% per annum for 2 years.

- a. $P > Q$
- b. $P < Q$
- c. $P = Q$
- d. Cannot determine

48. In the following question an assertion and reason are given. Choose the correct option: (4m)

Assertion (A): The average of five consecutive odd numbers is equal to the middle number.

Reason (R): In a set of consecutive numbers arranged in order, the middle number is equal to the average of all the numbers.

- a. Both A and R are true, and R is the correct explanation of A.
- b. Both A and R are true, but R is not the correct explanation of A.
- c. A is true, but R is false.
- d. A is false, but R is true.

49. Read the given statements carefully and select the CORRECT option. (4m)

Statement – I: $4(x + 3) = 4x + 12$

Statement – II: Multiplying both sides of an algebraic equation by the same non-zero integer does not change the value of the variable.

- a. Both Statement – I and Statement – II are true.
- b. Statement – I is false but Statement – II is true.
- c. Statement – I is true but Statement – II is false.
- d. Both Statement – I and Statement – II are false.

50. Anita bought some stationery items from a shop. The shopkeeper gave her the following bill: (4m)

New General Store				
Bill No.: 110093			Date: 12/06/2026	
Sr. No.	Item	Quantity	Rate per item (₹)	Amount (₹)
1	Colour Pencil	5	10	50
2	Notebook	3	40	180
3	Pen	4	20	80
4	Bag	1	500	500
			Grand Total	810

Anita checked the bill carefully. The quantities of the items and rates mentioned were correct. Which of the following statements correctly identifies the corrections that need to be made to the bill?

1. Change the amount for notebooks from ₹ 180 to ₹ 120.
 2. Change the amount for pens from ₹ 80 to ₹ 60.
 3. Change the grand total from ₹ 810 to ₹ 750.
 4. Change the amount for colour pencils from ₹ 50 to ₹ 40.
- a. 1 and 3 only
 - b. 1, 2 and 3
 - c. 2 and 4 only
 - d. 1, 3 and 4

