



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. Compare: 7.00002 _____ 7.00282 (1m)
 - a. >
 - b. <
 - c. =
 - d. None of the above
2. What does the zero in the number 0.74 represent? (1m)
 - a. That the number is less than one.
 - b. That the number is more than one.
 - c. The number has no value.
 - d. None of these.
3. Which of the following is the best suited unit for measuring the length of a rope? (1m)
 - a. Kilogram
 - b. Kilometer
 - c. Meter
 - d. Milliliter
4. How many lines of symmetry does the figure shown here have? (1m)
 - a. 8
 - b. 5
 - c. 2
 - d. None of these
5. How many milliliters make 135 l? (1m)
 - a. 135 ml
 - b. 1350 ml
 - c. 135000 ml
 - d. 0.00135 ml
6. How many minutes are there in one weekend (Saturday & Sunday)? (1m)
 - a. $48 \times 60 \times 60$
 - b. 24×60
 - c. 48×60
 - d. $24 \times 60 \times 60$
7. Look at the analogy carefully and choose the correct option: 7 : 14 :: 5 : _____ (1m)
 - a. 21
 - b. 10
 - c. 28
 - d. 14
8. Which of the following is odd one out? (1m)
 - a. 12
 - b. 24
 - c. 43
 - d. 18



9. For any quadrilateral, number of angles + number of sides = _____ (1m)

- a. 4
- b. 8
- c. 6
- d. 10

10. Which of the following terms describes a segment connecting any two points on a circle's circumference? (1m)

- a. Radius
- b. Diameter
- c. Chord
- d. Arc

SECTION 2: Applied Mathematics

11. Solve: $X + I + II + V =$ _____ (2m)

- a. XV
- b. XIIIIV
- c. XVIII
- d. XIV

12. Evaluate: $10 + 4 \times (9 \div 3) - 5$ (2m)

- a. 12
- b. 17
- c. 19
- d. 22

13. What is the estimated value of 4196 to the nearest thousand? (2m)

- a. 4000
- b. 1000
- c. 6000
- d. 5000

14. Solve: $\frac{2}{11} + \frac{7}{11} - \frac{3}{11} - \frac{5}{11}$ (2m)

- a. $\frac{11}{121}$
- b. $\frac{1}{11}$
- c. $\frac{1}{121}$
- d. $\frac{17}{11}$

15. Product of the third multiple of 3 and first multiple of 9 is _____. (2m)

- a. 18
- b. 81
- c. 54
- d. 216

16. Find the smallest number which is exactly divisible by 5, 10, 2 and 20. (2m)

- a. 20
- b. 40
- c. 50
- d. 60

17. What is the sum of the place value and the face value of 3 in the number 4356? (2m)

- a. 6
- b. 330
- c. 297
- d. 303

18. In a triangle ABC, $\angle A = 74^\circ$ and $\angle C = 66^\circ$. Find $\angle B$. (2m)

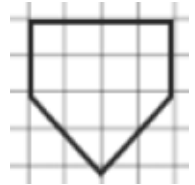
- a. 100°
- b. 80°
- c. 60°
- d. 40°

19. Find the value of the 10th multiple of 10 minus the 5th multiple of 5. (2m)

- a. 75
- b. 100
- c. 70
- d. 90

20. What is the area of the given shape, if 1 square = 1 sq. cm? (2m)

- a. 9 sq. cm
- b. 10 sq. cm
- c. 8 sq. cm
- d. 12 sq. cm



21. Which of the following is NOT TRUE? (2m)

- a. $56 \times 13 = 13 \times 56$
- b. $56 \times 13 = 13 \times (50 + 6)$
- c. $56 \times 13 = 50 \times (10 + 3)$
- d. $56 \times 13 = (50 + 6) \times (10 + 3)$

22. Using the digits 0, 1, 3, 5 write down the smallest and largest possible numbers with two decimal places without putting 0 in the tens or hundredths place. (2m)

- a. Largest: 53.01, Smallest; 01.35
- b. Largest: 53.01, Smallest; 10.35
- c. Largest: 53.10, Smallest: 01.53
- d. Largest: 05.13, Smallest; 01.35

23. Find the quotient of: $4\frac{2}{7} \div \frac{2}{21}$ (2m)

- a. 45
- b. 47
- c. 50
- d. 52

24. Which of the following pairs of numbers has the HCF of 8? (2m)

- a. 18 and 2
- b. 24 and 40
- c. 12 and 36
- d. 32 and 18

25. What is the radius of a circle if the length of its largest chord is 120 cm? (2m)

- a. 100 cm
- b. 60 cm
- c. 240 cm
- d. None of these

SECTION 3: Case-Based Mathematics

26. Mayank bought 15 kg apples on day 1, 10 kg 500 g apples on day 2 and 7 kg 500 g apples on day 3. What is the total quantity of apples bought by Mayank in three days? (2m)

- a. 33 kg
- b. 32 kg
- c. 31 kg 900 g
- d. None of these

27. Shubham bought 12 bags of black balls and 4 bags of red balls. Each bag of balls has 11 pieces in it. Which expression could he use to find the total number of balls he bought? (2m)

- a. $(11 \times 12) + 4$
- b. $(11 \times 4) + 12$
- c. $11 \times (12 + 4)$
- d. $11 + (12 \times 4)$

28. What is the total amount of money in a purse if it contains two notes of ₹ 5, three notes of ₹ 10 and four notes of ₹ 50? (2m)

- a. ₹ 220
- b. ₹ 240
- c. ₹ 200
- d. ₹ 260

29. Sneha bought 8 boxes of cold drinks for a party. There were 22 cans in each box. How many cans of cold drinks did she buy altogether? (2m)

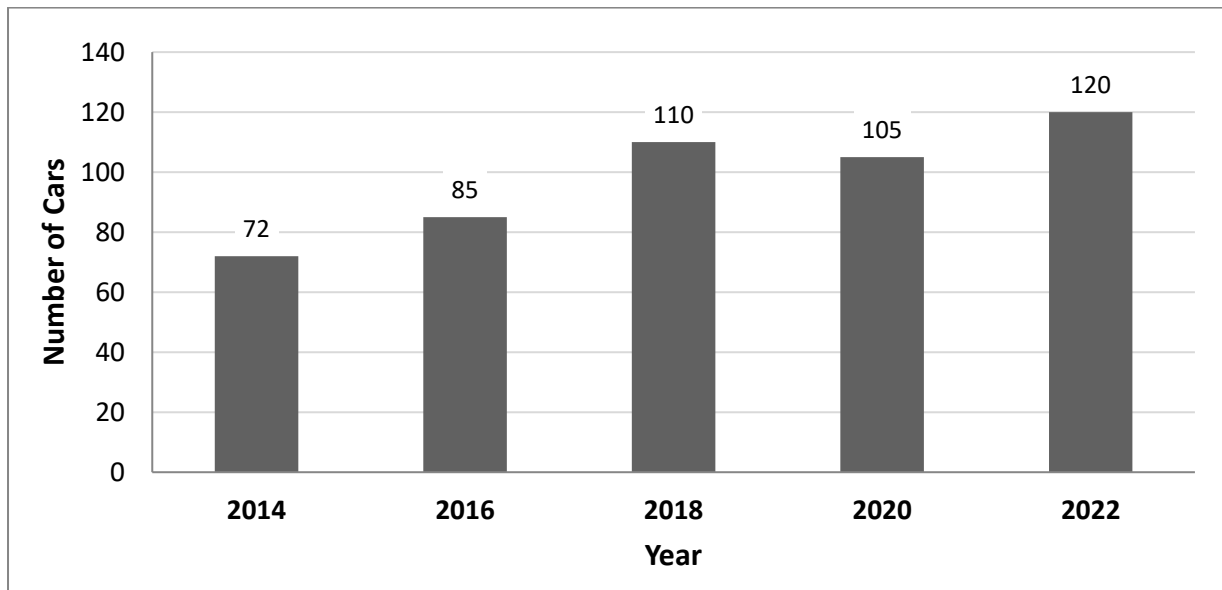
- a. 152
- b. 176
- c. 146
- d. 202

30. A playground which is 125 m long and 50 m broad is to be fenced with wire. How much wire is needed? (2m)

- a. 270 m
- b. 230 m
- c. 350 m
- d. 5000 m

Answer questions 31–34 based on the bar graph given below:

The bar graph given below represents data on the number of cars in a town in various years.



31. The town has the lowest number of cars in the year _____. (2m)

- a. 2014
- b. 2020
- c. 2008
- d. 2016

32. The town had the highest number of cars in the year _____. (2m)

- a. 2008
- b. 2014
- c. 2018
- d. 2022

33. The town has _____ more cars in 2020 compared to the number of cars in the year 2016. (2m)

- a. 21
- b. 20
- c. 19
- d. 18

34. Compare: Number of cars in 2020 _____ Number of cars in 2018. (2m)

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

35. Sara has 4 ribbons of different lengths as follows: (2m)

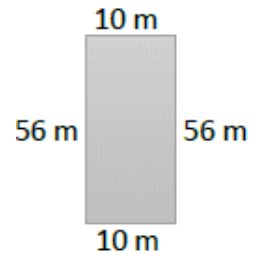
Ribbon Colour	Length
Red	1.23 m
Green	1.24 m
Yellow	1.230 m
Blue	1.250 m

Which ribbon is longer than the green ribbon?

- a. Red
- b. Yellow
- c. Blue
- d. None of these

36. A rectangular playground ABCD has a length of 56 m and a breadth of 10 m. A rope is to be placed all around the playground for a sports activity. How much rope is needed to cover the boundary of the playground? (2m)

- a. 112 m
- b. 132 m
- c. 140 m
- d. 156 m



37. The school's science exhibition is scheduled to begin at 3:35 p.m. Riya needs 13 minutes to walk from her classroom to the exhibition hall. Before leaving, she spends 7 minutes collecting her project materials. If Riya starts collecting her materials at 3:35 p.m., at what time will she reach the exhibition hall? (2m)

- a. 3:48 p.m.
- b. 3:55 p.m.
- c. 3:58 p.m.
- d. 4:05 p.m.

38. A shopkeeper has three packets of sugar weighing 1.25 kg, 1.50 kg, and 0.75 kg. He wants to make a 4 kg package by combining these packets and adding some more sugar. How much more sugar does he need? (2m)

- a. 0.25 kg
- b. 0.50 kg
- c. 0.75 kg
- d. 1.00 kg

39. A train timetable shows: (2m)

Station	Arrival Time	Stop
A	8:20 a.m.	10 min
B	9:05 a.m.	15 min
C	10:00 a.m.	—

At what time will the train leave Station B?

- a. 9:10 a.m.
- b. 9:15 a.m.
- c. 9:20 a.m.
- d. 9:25 a.m.

40. Riya bought a toy for ₹ 250 and sold it for ₹ 300. What can you say about her transaction? (2m)

- a. She made a loss of ₹ 50
- b. She made a profit of ₹ 50
- c. She made a profit of ₹ 100
- d. She had no profit or loss

41. A school has 24 students going on a picnic. The teacher wants to make equal groups so that every group has the same number of students and no student is left out. Which of the following could be the number of students in each group? (2m)
- 5
 - 6
 - 7
 - 10
42. A rectangular piece of paper is 15 cm long and 10 cm wide. Sara cuts out a 5 cm $\times$ 4 cm rectangle from it. What is the area of the paper left? (2m)
- 110 cm²
 - 120 cm²
 - 130 cm²
 - 150 cm²
43. A class bought 50 juice boxes for ₹ 20 each and sold each for ₹ 25. What was the class's total profit? (2m)
- ₹ 150
 - ₹ 200
 - ₹ 250
 - ₹ 300
44. Jim is thinking of a number. It is: (2m)
- | | |
|--------------------------------|----------------------------|
| 1. Greater than 4,000 | 2. Less than 5,000 |
| 3. Has 6 in the hundreds place | 4. Has 2 in the ones place |
- Which could be Jim's number?
- 4,625
 - 4,652
 - 4,862
 - 5,462
45. Shreya comes home from school at 4:00 p.m. She relaxes for 30 minutes before starting her homework. She takes one and a half hours to complete her homework. As soon as she finishes her homework, she goes outside to play. At what time does Shreya go out to play? (2m)
- 6:30 p.m.
 - 6:00 p.m.
 - 7:30 p.m.
 - 8:00 p.m.

SECTION 4: Challenger's Section

46. Read the given statements carefully and select the CORRECT option. (4m)
- Every fraction has an infinite number of equivalent fractions.
 - Equivalent fractions denote the same value.
 - A proper fraction has a numerator less than its denominator.
 - A mixed fraction consists of a whole number and a fraction.
- 1, 2 and 3 are true
 - Only 2 is true
 - 1 and 3 are true
 - 1, 2, 3 and 4 are true

47. Match the angles in Column A with their correct types in Column B. (4m)

Column A – Angle	Column B – Type of Angle
1. 90°	i. Reflex angle
2. 180°	ii. Right angle
3. 250°	iii. Straight angle
4. 45°	iv. Acute angle

Which of the following is the correct matching?

- 1 – ii, 2 – iii, 3 – i, 4 – iv
- 1 – iii, 2 – ii, 3 – iv, 4 – i
- 1 – i, 2 – iv, 3 – ii, 4 – iii
- 1 – iv, 2 – i, 3 – iii, 4 – ii

48. Aarav bought a second-hand cupboard for ₹ 4,500. He spent ₹ 350 on repairs and ₹ 150 on painting it. He wanted to earn a profit of ₹ 1,000 by selling it. At what price should Aarav sell the cupboard? (4m)

- ₹ 5,500
- ₹ 5,750
- ₹ 6,000
- ₹ 6,250

49. A school canteen records the amount of juice in three containers. Container A has 2.75 L, Container B has 2.64 L, and Container C has 2.35 L of juice. A student makes the following observations: (4m)
Statement I: When the amounts are rounded to the nearest tenth of a litre, Containers A and B have different amounts.

Statement II: When the amount in Container C is rounded to the nearest whole litre, it becomes 2 L.

- Both Statement I and Statement II are correct.
- Statement I is correct, but Statement II is incorrect.
- Statement I is incorrect, but Statement II is correct.
- Both Statement I and Statement II are incorrect.

50. A school is organising a healthy snack competition. Each team is given 2 kg 400 g of nuts. One team uses $\frac{3}{8}$ of the nuts to prepare energy bars. From the remaining nuts, they use 450 g to decorate the snack boxes. How many grams of nuts are left? (4m)

- 1,000 g
- 1,050 g
- 1,100 g
- 1,150 g

