(B) In a triangle, if the sum of the squares on two sides is equal to the square on the third side, then the angle opposite to the third side is a right angle.

(C) Of all the line segments that can be drawn to a given line from a point not lying on it, the perpendicular line is the shortest.

(D) The sum of any two sides of a triangle is always greater than the third side.

45. What number should multiply to $\frac{-4}{9}$ to get $\frac{-7}{15}$?

(A) $\frac{19}{20}$ (B) $\frac{-63}{60}$

(C) $\frac{-28}{135}$ (D) $\frac{21}{20}$

46. A group of 500 men has a provisions for 30 days. How long would the provisions last for 600 men ?

(A) 20 days (B) 23 days

(C) 25 days (D) 28 days

47. The value of $(a+b)^2+(a-b)^2$ is :

(A) $2(a^2+b^2)$ (B) $2(a^2-b^2)$

(C) $a^2+b^2$ (D) $a^2-b^2$

48. The cost of a book and a pen is `45. If the cost of the book is 9 more than that of a pen, the cost of 5 books and 2 pens is :

(A) `75 (B) `146

(C) `158 (D) `171

49. The value of $x$ when $a(x-a)=b(x-b)$ is :

(A) $a-b$ (B) $a+b$

(C) $(a+b)(a-b)$ (D) $a^2+b^2$

50. The measure of an angle in a semi circle is :

(A) $45^0$ (B) $60^0$

(C) $75^0$ (D) $90^0$

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SPACE FOR ROUGH WORK

# 26th MVII
# (MATHEMATICS)

Time Allowed 1 hour Maximum Marks : 100

**Read the following instructions carefully before you begin to answer the questions.**

1. This booklet contains 50 questions in all.
2. All questions are compulsory and each question carries 2 marks.
3. Before you start to answer the questions you must check up this booklet and ensure that it contains all the pages 7 (Seven) and see that no page is missing or repeated. If you find any defect in this Booklet, you must replace it immediately.
4. There will **NOT** be any negative marking for wrong answers.
5. You are required to fill the information on the answer sheet which you will get in the examination hall by **H.B. pencil or BALL point pen(Blue or Black).**
6. **Answer Sheet** and **Question Paper** will be supplied in examination hall. After the test is over, you should hand over the answer sheet to the invigilator before leaving the room.
7. You should write your **Name, Roll No., School name** carefully on the space provided in the answer sheet. Otherwise you will be awarded **ZERO** mark.
8. If you wish to change your answer, **ERASE** completely the darkened circle by using an **ERASER** and then blacken the new circle. If not erased completely, smudges will be left on the erased circle and the question will be read as having two answers and will be ignored for giving any credit. (only for pencil users)
9. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.
10. You are not allowed to leave the examination hall until you are advised to do so by the invigilator.

1. A man gave 35% of his salary to his son, 25% to his daughter and 50% of the remaining to his wife. Still he had `2000 with him. His salary was :
   (A) `15000 (B) `12000
   (C) `10000 (D) `8000

2. The scientific notation of $\frac{2}{100000000}$ is :
   (A) $2\times10^{8}$ (B) $2\times10^{-8}$
   (C) $2\times10^{7}$ (D) $2\times10^{-7}$

3. The area of a right isosceles triangle whose hypotenuse is $6\sqrt{2}$ cm is :
   (A) 12cm² (B) 18cm²
   (C) 24cm² (D) 36cm²

4. The property used in the equation $12(x+4)=12x+48$ is :
   (A) Closure property
   (B) Commutative property
   (C) Associative property
   (D) Distributive property

5. A farmer walking at the rate of 3km/hr crosses his square field diagonally in 1 minute. Then the area of his square field is :
   (A) 1000m² (B) 1250m²
   (C) 2500m² (D) 5000m²

6. What percent of 1 day is 36 minutes ?
   (A) 30% (B) $2\frac{1}{2}\%$
   (C) $2\frac{1}{12}\%$ (D) $24\%$

7. A man bought an article at `$x$ and sold it with a loss of 5%. Then the selling price of the article is :
   (A) $\frac{19}{20}x$ (B) $\frac{21}{20}x$
   (C) $\frac{95}{100}x$ (D) $\frac{15}{20}x$

8. The sum of three numbers is 98. If the ratio between the first and the second be 2:3 and between the second and the third be 5:8, then the second number is :
   (A) 30 (B) 20
   (C) 58 (D) 48

9. Which of the following is not true?
   (A) A rhombus is always a parallelogram.
   (B) The opposite sides of a parallelogram are equal in length and opposite angles are equal in measure.

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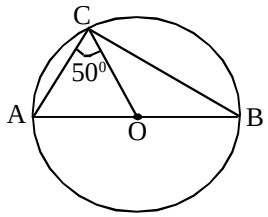
(D) $6\frac{2}{3}\%$, 7 years 8 months

38. A vertical pole is broken at a height of 5m from the ground and its top touches the ground at a distance of 12m from foot of the pole. The original height of the pole is :-
   (A) 13m (B) 14m
   (C) 15m (D) 18m

39. In the figure the measure of $\angle ACO=50^{0}$. The measure of $\angle AOC$ is :




   (A) $90^{0}$ (B) $60^{0}$
   (C) $50^{0}$ (D) $80^{0}$

40. There are some coins and rings of either gold or silver in a box. 60% of the objects are coins,40% of the rings are gold and 30% of the coins are silver. What is the percentage of gold article?
   (A) 16% (B) 27%
   (C) 58% (D) 70%

41. At what time will a sum become triple itself at 20% per annum?
   (A) 4 years (B) 6 years
   (C) 8 years (D) 10 years

42. The factors of $x^{2}+9y^{2}-6xy-16z^{2}$ is :
   (A) $(x-3y)(x+3y)$
   (B) $(x+3y+4z)(x-3y-4z)$
   (C) $(x-3y-4z)(x-3y+4z)$
   (D) $(x+3y-4z)(x+3y+4z)$

43. Which of the following is a non terminating decimal ?
   (A) $\frac{6}{15}$ (B) $\frac{9}{12}$
   (C) $\frac{4}{6}$ (D) $\frac{2}{25}$

44. The statement of converse of phythagoras theorem is :
   (A) In a right triangle, the square of hypotenuse is equal to the sum of the squares of the other two sides.

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(C) $y_1y_2 = x_1x_2 = k$ (D) $x_1y_2 = y_1x_2 = k$

31. If the square of the hypotenuse of a right isosceles triangle is $162m^2$ then the length of one leg of the triangle is :
(A) 9m (B) 81m
(C) 46m (D) 18m

32. Tomba's car gets an average of 28 miles per gallon of petrol. He plans to drive 200 miles today and 220 miles tomorrow. How many gallons of petrol should he expect to use in all ?
(A) 15 gallons (B) 28 gallons
(C) 56 gallons (D) 67 gallons

33. The annual increase in population of a village is 6%. The increase in the population from 2015 to 2016 was 930. The population of the village in the year 2016 was :
(A) 15500 (B) 16200
(C) 16430 (D) 17405

34. If a natural number 'n' leaves remainder 3 as remainder when divided by 4. What will be the remainder when '2n' is divided by 4 ?
(A) 0 (B) 1
(C) 2 (D) 3

35. If $\frac{3x+4y}{2x+5y}=\frac{4}{3}$, then find the value of $x:y$.
(A) 1:8 (B) 8:1
(C) 4:3 (D) 3:4

36. The owner of a furniture shop charges his customer 29% more than the cost price due to economic blockade at national highway. If a customer paid `7482 for a computer table, what was the cost price of the computer table :
(A) `5400 (B) `5800
(C) `6200 (D) `6600

37. The simple interest on a sum of money is $\frac{4}{9}$ of the principal. Find the rate percent per annum and time if both are numerically equal :
(A) $5\frac{3}{5}\%$, 5 years 8 months
(B) $7\frac{2}{3}\%$, 7 years 8 months
(C) $6\frac{2}{3}\%$, 6 years 8 months

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(C) The diagonals of a parallelogram bisect each other.
(D) The diagonals of a rhombus are equal and bisect each other.

10. A person invested part of `2400 at 4% and the rest at 6%. If his annual income from both are equal, then the average rate of interest is :
(A) 4.6% (B) 4.8%
(C) 5.0% (D) 5.2%

11. An equilateral triangle ABC is inscribed in a circle in which all the vertices are on the circle. And another $\Delta$DBC is also inscribed such that D is on the circle and on the same side of A. Then the measure of $\angle BOC$ is :
(A) $90^0$ (B) $60^0$
(C) $40^0$ (D) $30^0$

12. Gopalkrishna studies $8\frac{1}{4}$ hours daily. He devotes $2\frac{3}{4}$ hours of his time for English and Mathematics, $3\frac{1}{4}$ hours for Physics and Chemistry. How much time does he devote for other subjects? :
(A) $3\frac{2}{4}$ hours (B) $3\frac{1}{4}$ hours
(C) $2\frac{2}{4}$ hours (D) $2\frac{1}{4}$ hours

13. The measures of the first three angles of a quadrilateral are in the ratio 2:3:4 and the measure of the fourth angle is $90^0$. The measure of the second angle is :
(A) $40^0$ (B) $60^0$
(C) $90^0$ (D) $120^0$

14. In an election of a locality, two candidates Suresh and Doren competed the vote. Suresh secured 40% of the votes but was defeated by Doren by getting 289 more votes. The total number of votes recorded was :
(A) 29800 (B) 1490
(C) 1445 (D) 1580

15. The interest on `560 for 3 months is `14. The rate of interest is :
(A) $\frac{25}{28}$% per annum
(B) $\frac{25}{28}$% per month
(C) 10% per annum
(D) 10% per month

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16. Which of the following can be the sides of a right triangle ?
(A) 2cm, 3cm, 4cm
(B) 4cm, 5cm, 12cm
(C) 9cm, 18cm, 27cm
(D) 5cm, 12cm, 13cm

17. Divide the sum of $\frac{5}{12}$ and $\frac{-17}{24}$ by the product of $\frac{2}{5}$ and $\frac{7}{4}$. The result is :
(A) $\frac{-8}{27}$ (B) $\frac{-5}{12}$
(C) $\frac{6}{31}$ (D) $\frac{3}{12}$

18. Sanathoi walks from his house to school at 2.5km/hr and arrives 12 minutes late. The next day he walks at 4km/hr and reaches the school 15 minutes earlier. The distance from his house to school is :
(A) 2km (B) 2.5km
(C) 3km (D) 3.5km

19. The length of two legs of a right triangle are 28cm and 45cm. Find the length of the hypotenus .
(A) 47cm (B) 48cm
(C) 51cm (D) 53cm

20. Which of the following is the smallest ?
(A) $\frac{-5}{21}$ (B) $\frac{-8}{35}$
(C) $\frac{-13}{54}$ (D) $\frac{1}{2}$

21. The square of $x+2y-3z$ is :
(A) $x^2+4y^2+9z^2+4xy-12yz-6zx$
(B) $x^2+4y^2-9z^2+4xy+12yz-6zx$
(C) $x^2+4y^2+9z^2+4xy+12yz+6zx$
(D) $x^2+4y^2+9z^2-4xy-12yz-6zx$

22. If $x+\frac{1}{x}=3$, then the value of $x^2+\frac{1}{x^2}$ is :
(A) 9 (B) 8
(C) 7 (D) 6

23. The ratio of two numbers is 3:7. If their LCM is 210, then the two numbers are respectively :
(A) 70 and 30 (B) 24 and 56
(C) 30 and 70 (D) 21 and 49

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24. The number that must multiply $\left(\frac{-3}{5}\right)^{-9}$ to get 1 is :
(A) $\left(\frac{-3}{5}\right)^{8}$ (B) $\left(\frac{-3}{5}\right)^{-8}$
(C) $\left(\frac{-3}{5}\right)^{-9}$ (D) $\left(\frac{-3}{5}\right)^{9}$

25. Certain distance is covered at a certain speed. If half their distance is covered in double time. The ratio of the two speed is :
(A) 4:1 (B) 1:4
(C) 2:1 (D) 1:2

26. A contractor employed 210 men to build a house in 60 days. After 12 days he was joined by 70 more men. In how many days will the remaining work be finished ?
(A) 35 (B) 36
(C) 38 (D) 40

27. Which of the following statement is correct ?
(A) $\frac{pq+r}{q}=p+r$
(B) $\frac{p+r}{q+r}=\frac{q}{r}$
(C) $\frac{pq+pr}{ps}=\frac{q+r}{s}$
(D) $\frac{p(q+r)}{p+s}=\frac{q+r}{s}$

28. A plastic bag can carry not more than $\frac{3}{5}$kg . Find the maximum number of potatoes that can hold if the weight of each potato is $\frac{1}{10}$kg.
(A) 6 (B) 7
(C) 8 (D) 4

29. A man sold a second hand laptop at `25440 at a profit of 6%. The cost price of the laptop was :
(A) `24800 (B) `24500
(C) `24000 (D) `26300

30. Two quantities $x$ and $y$ are said to vary inversely as each other. Then which of the following is true:
(A) $\frac{x_1}{y_1}=\frac{x_2}{y_2}=k$ (B) $x_1y_1=x_2y_2=k$

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