

45. If 8 persons can do a work in 15 days, how many persons can do 3 times the work in 12 days ?

(A) 10 (B) 20  
(C) 30 (D) 40

46. The time taken to cross a stationary object having length ( $l_1$ ) by a moving object ( $l_2$ ) with uniform speed ( $v$ ) is

(A)  $\frac{l_1}{v}$  (B)  $\frac{l_1 - l_2}{v}$   
(C)  $\frac{l_1 + l_2}{v}$  (D) None of these

47. The sum of the digits of a two digit number is 10. If its tens digit is 4 more than the ones digit, then the number is :

(A) 64 (B) 46  
(C) 37 (D) 73

48. For selecting school captain there was a vote between two students of class x. One student got 62% and won the vote. He got 144 votes (students) more than the

other. The total number of students in the school who joined the vote is :

(A) 600 (B) 500  
(C) 800 (D) 700

49. How many prime factors of the given expression  $16x^4 - 81y^4$  are there ?

(A) 2 (B) 3  
(C) 4 (D) 5

50. The amount on Rs. 5000 at 14% per annum for 6 years is

(A) Rs. 9200 (B) Rs. 8200  
(C) Rs. 4200 (D) Rs. 10200

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SPACE FOR ROUGH WORK

## 24<sup>th</sup> MVII (MATHEMATICS)

Time Allowed 1 hour

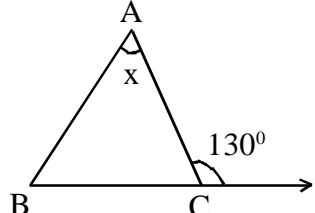
Maximum Marks : 100

**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**.
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.**, 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 answer and will be ignored for giving any credit.
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. The number of terms in the expansion of  $[(2x + 3y)^2 + (2x - 3y)^2]^2$  when simplified is :  
(A) 3 (B) 4  
(C) 6 (D) 8
2. Eighteen years ago, Chinglemba was three times as old as his son. But now he is only twice as old now. What is Chinglemba's age today ?  
(A) 36 years (B) 45 years  
(C) 72 years (D) 55 years
3. The sides of the four different triangles are given below :  
1) 3, 4, 5                      2) 8, 15, 17  
3) 4, 5, 6                      4) 6, 8, 10  
Which of the following is not right triangle ?  
(A) 2 (B) 3  
(C) 2 & 3 (D) 3 & 4
4. How many angles can be drawn in a semi-circle ?  
(A) Only one (B) Two  
(C) Four (D) Infinite
5. All the four sides and four angles of a quadrilateral are equal, then the quadrilateral is always a :  
(A) parallelogram (B) rectangle  
(C) square (D) rhombus
6. In the following rational numbers 'p' is a positive integer. Which of the following is the least ?  
(A)  $\frac{-p}{3}$  (B)  $\frac{-p}{4}$   
(C)  $\frac{-p}{5}$  (D)  $\frac{-p}{6}$
7. Tomba can complete a work in 3 days, Ramesh in 4 days and Sanathoi in 5 days. If they complete the same work together and get ₹ 14,100 as remuneration, then the share of Sanathoi in rupees will be :  
(A) 2800 (B) 3000  
(C) 3200 (D) 3600

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37. A sum of money becomes 4 times at simple interest in 10 years. What is the rate of interest ?  
(A) 10% (B) 20%  
(C) 30% (D) 40%
38. Kim rows 12km downstream in 3 hours and he rows 12km upstream in 6 hours. Find the speed of the stream.  
(A) 1km/hr (B) 2km/hr  
(C) 3km/hr (D) 4km/hr
39. In the diagram  $AB = AC$ , the value of 'x' is :  

  
(A)  $100^\circ$  (B)  $65^\circ$   
(C)  $80^\circ$  (D)  $70^\circ$
40. The hour hand of a clock is 21cm long. What distance on the clock its tip cover in 12 hours ?  
(A) 132cm (B) 300cm  
(C) 1564cm (D) 1584cm
41. The product of two rational numbers is 1. If one number is  $\frac{2}{5}$ . What is the other number ?  
(A)  $\frac{2}{5}$  (B)  $\frac{5}{2}$   
(C)  $\frac{3}{5}$  (D)  $\frac{5}{3}$
42. If  $a + \frac{1}{a} = 7$ , then the value of  $a^4 + \frac{1}{a^4}$  is :  
(A) 47 (B) 45  
(C) 2207 (D) 2205
43. The value of  $(7x - 3y)^2 - (3y + 7x)^2$  is :  
(A)  $14xy$  (B)  $-14xy$   
(C)  $84xy$  (D)  $-84xy$
44. If  $\frac{3}{x-3} = \frac{7}{x-7}$ , then the value of x is :  
(A) 0 (B) 3  
(C) 7 (D) 9

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30. A contractor undertook to do a certain work in 75 days and employed 60 men to do it. After 25 days he found that only  $\frac{1}{4}$  of the work was done. How many more men must be employed in order that the work be finished in time ?  
(A) 34 (B) 38  
(C) 35 (D) 30
31. If x% of y is z, y% of z is x and z% of x is 1, then which one of the following is not correct ?  
(A)  $x = 10$  (B)  $y = 100$   
(C)  $x = z$  (D)  $x = y$
32. A man purchased two articles for ₹ 3000 each, by selling those he gains 20% on the one and loss 20% on the other. Find the gain or loss percent on the whole transaction.  
(A) 4% loss  
(B) 4% gain  
(C) no profit, no loss  
(D) 20% profit
33. David, Chandra and Kumar invested certain amount to start a business, the ratio of their investment is 2:3:4. The investment of Kumar is ₹ 15000, then the total investment is :  
(A) ₹ 18750 (B) ₹ 27750  
(C) ₹ 33750 (D) ₹ 38570
34. What is the percentage of the least number in the greatest number among  $\frac{3}{5}, \frac{9}{5}, \frac{1}{5}$  &  $\frac{7}{5}$  ?  
(A)  $11\frac{1}{3}\%$  (B)  $11\frac{1}{9}\%$   
(C) 20% (D)  $9\frac{2}{3}\%$
35. At what sum of money amount to ₹ 3885 in 146 days at 9% per annum?  
(A) ₹ 2480 (B) ₹ 3620  
(C) ₹ 3750 (D) ₹ 3800
36. The number of prime divisor of 960 is :  
(A) 3 (B) 4  
(C) 5 (D) 6

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8. The measure of an angle at the major segment formed by a chord which is equal to the radius of the circle is :  
(A)  $90^\circ$  (B)  $60^\circ$   
(C)  $30^\circ$  (D) can not measure
9. Force applied and acceleration produced is :  
(A) direct variation  
(B) inverse variation  
(C) depend on the force  
(D) none of these
10. A can do a piece of work in 9 days. B is 50% more efficient than A. The number of days it takes B to do the same piece of work.  
(A)  $13\frac{1}{2}$  (B)  $4\frac{1}{2}$   
(C) 6 (D) 3
11. Which of the following statement is false ?  
(A)  $(-1)^n = 1$ , if n is a natural number  
(B) For any rational number a,  $a^0 = 1$   
(C) If  $4 \times 8^m = 2^5$ , then  $m = 1$   
(D) None of these
12. The length of a diagonal of a square is  $16\sqrt{2}$  m then the perimeter of the square is :  
(A) 256 m<sup>2</sup> (B) 64m  
(C) 32 m (D) 124 m
13. If  $2^m - 2^{m-1} - 4 = 0$ , then the value of  $m$  will be :  
(A) 4 (B) 3  
(C) 6 (D) 27
14. A sum of ₹ 2000 lent at simple interest of 12.5% per annum will become twice in :  
(A) 8 years (B) 16 years  
(C) 12 years (D) 20 years
15. Ibetombi bought 4 boxes of oranges. Each box contain 100 oranges and each box cost ₹ 125. And she sold the oranges at a profit of ₹ 100. She sold them in terms of dozens. The selling price of a dozen is  
(A) ₹ 20 (B) ₹ 12  
(C) ₹ 18 (D) ₹ 40

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- (3) -

16. In an examination conducted by MPSC, 52% of the total candidate is from science stream, 34% from Arts stream and remaining 357 are from commerce stream. How many candidates are there in all ?  
(A) 1250 (B) 2550  
(C) 2250 (D) 3200
17. The diagonals of a quadrilateral are of length 6cm and 8cm. If the diagonals are bisect each other at right angle, then the perimeter of the quadrilateral is :  
(A) 28cm (B) 48cm  
(C) 24cm (D) 20cm
18. When the numerator of a fraction is increased by 4, the fraction increases by  $\frac{2}{3}$ . The denominator of the fraction is :  
(A) 2 (B) 3  
(C) 4 (D) 6
19.  $\left(\frac{1}{6}\right)^{-2} + \left(\frac{1}{4}\right)^{-3} - \left(\frac{1}{10}\right)^{-2} = \text{---}$   
(A) 20 (B) 0  
(C) 200 (D) 100
20. After a deduction of 5% from a certain sum and then 10% deduction from the remainder, a sum of ₹ 171 is left. What was the original sum ?  
(A) ₹ 200 (B) ₹ 250  
(C) ₹ 150 (D) ₹ 300
21. If the perimeter of a rectangular field is 440 metres and its length is eight-thirds of its breadth, then the area of the field is :  
(A) 9600m<sup>2</sup> (B) 10800m<sup>2</sup>  
(C) 7200m<sup>2</sup> (D) 8400m<sup>2</sup>
22. In our state Manipur all the schools are closed from 9<sup>th</sup> July till 3<sup>rd</sup> Sept. 2015 due to the aggitation of ILPS in Manipur. What percent of the whole year are closed in this period ( including non working days) ?  
(A)  $25\frac{13}{73}\%$  (B)  $23\frac{45}{73}\%$   
(C)  $18\frac{13}{73}\%$  (D)  $15\frac{45}{73}\%$

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23. Which of the following rational number is the smallest ?  
(A)  $\frac{3}{5}$  (B)  $\frac{5}{9}$   
(C)  $\frac{2}{3}$  (D)  $\frac{3}{4}$
24. Two pipes can fill up a tank in 30 minutes and 40 minutes respectively and another pipe can empty the full tank in 20 minutes. If all the pipes are opened when the tank is half full, then the time required to fill the tank will be :  
(A) 1hr (B) 2 hrs  
(C) 3 hrs (D) 2hrs 30 min
25. A train 1.2 km long running at 90 Km/hr crosses a 1.8 km long bridge in \_\_\_ :  
(A) 1 min (B) 2 min  
(C) 3 min (D) 4min
26. If  $4^x = 1024$ , then  $6^{2x-8}$  is :  
(A) 36 (B) 216  
(C) 6 (D) 1
27. The number of diagonal that can be drawn in a decagon is :  
(A) 8 (B) 20  
(C) 35 (D) 128
28. If 23 rational numbers are multiplied and the product is negative then which of the following statement can be true ?  
(A) 10 are negative, 13 are positive  
(B) 14 are negative, 9 are positive  
(C) 12 are negative, 21 are positive  
(D) 17 are negative, 6 are positive
29. The floor of a room of length 15m by 6m is to pave with square tiles at the rate of ₹ 30 per sq.m. Find the cost of paving square tiles.  
(A) ₹ 2500 (B) ₹ 2600  
(C) ₹ 2700 (D) ₹ 3000

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