



# Sri Raghavendra Tuition Center

UNIT - 2

10th Standard

Maths

Date : 24-10-24

Reg.No. :

Exam Time : 01:30 Hrs

Total Marks : 40

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Centum Book Available

## I . Multiple Choice Question.

10 x 1 = 10

- 1) Using Euclid's division lemma, if the cube of any positive integer is divided by 9 then the possible remainders are  
(a) 0, 1, 8 (b) 1, 4, 8 (c) 0, 1, 3 (d) 0, 1, 3
- 2) The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is  
(a) 2025 (b) 5220 (c) 5025 (d) 2520
- 3) If 6 times of 6<sup>th</sup> term of an A.P. is equal to 7 times the 7<sup>th</sup> term, then the 13<sup>th</sup> term of the A.P. is  
(a) 0 (b) 6 (c) 7 (d) 13
- 4) An A.P. consists of 31 terms. If its 16<sup>th</sup> term is m, then the sum of all the terms of this A.P. is  
(a) 16 m (b) 62 m (c) 31 m (d)  $\frac{31}{2}$  m
- 5) In an A.P., the first term is 1 and the common difference is 4. How many terms of the A.P. must be taken for their sum to be equal to 120?  
(a) 6 (b) 7 (c) 8 (d) 9
- 6) If  $A = 2^{65}$  and  $B = 2^{64} + 2^{63} + 2^{62} + \dots + 2^0$  Which of the following is true?  
(a) B is  $2^{64}$  more than A (b) A and B are equal (c) B is larger than A by 1 (d) A is larger than B by 1
- 7) The next term of the sequence  $\frac{3}{16}, \frac{1}{8}, \frac{1}{12}, \frac{1}{18}, \dots$  is  
(a)  $\frac{1}{24}$  (b)  $\frac{1}{27}$  (c)  $\frac{2}{3}$  (d)  $\frac{1}{81}$
- 8) If the sequence  $t_1, t_2, t_3, \dots$  are in A.P. then the sequence  $t_6, t_{12}, t_{18}, \dots$  is  
(a) a Geometric Progression (b) an Arithmetic Progression (c) neither an Arithmetic Progression nor a Geometric Progression  
(d) a constant sequence
- 9) The first term of an arithmetic progression is unity and the common difference is 4. Which of the following will be a term of this A.P.  
(a) 4551 (b) 10091 (c) 7881 (d) 13531

## II. ANSWER ANY 10 QUESTION

5 x 2 = 10

- 10) Can the number  $6^n$ , n being a natural number end with the digit 5 ? Give reason for your answer.
- 11) Find the sum of 8 terms of the G.P. 1, -3, 9, -27....
- 12) Find the first term of the G.P. whose common ratio 5 and whose sum to first 6 terms is 46872
- 13) Find the sum of  
 $1^3 + 2^3 + 3^3 + \dots + 16^3$

- 14) Find the next three terms of the sequences.  
5, 2, -1, -4,...
- 15) Find the sum of the following  
 $6 + 13 + 20 + \dots + 97$
- 16) Which of the following sequences are in G.P.?  
4, 44, 444, 4444,...
- 17) Find the sum of the following series  
 $1 + 4 + 9 + 16 + \dots + 225$
- 18) Is the sequence  $2, 2^2, 2^{2^2}, 2^{2^{2^2}}, \dots$  is a G.P.?
- 19) Find the 15<sup>th</sup>, 24<sup>th</sup> and n<sup>th</sup> term (general term) of an A.P. given by 3, 15, 27, 39
- 20) Find the sum  $3 + 1 + \frac{1}{3} + \dots \infty$
- 21) First term a and common difference d are given below. Find the corresponding A  
 $a = \frac{3}{4}, d = \frac{1}{2}$
- 22) Find the 8<sup>th</sup> term of the G.P 9,3,1,....

**III. ANSWER ANY 10 QUESTION**

4 x 5 = 20

- 23) a) In an A.P., sum of four consecutive terms is 28 and their sum of their squares is 276. Find the four numbers.  
**(OR)**
- b) A mother divides Rs. 207 into three parts such that the amount are in A.P. and gives it to her three children. The product of the two least amounts that the children had Rs. 4623. Find the amount received by each child.
- 24) a) The sum of the cubes of the first n natural numbers is 2025. then Find the value of n.  
**(OR)**
- b) The value of a motor cycle depreciates at the rate of 15% per year. What will be the value of the motor cycle 3 year hence, which is now purchased for Rs.45,000?
- 25) a) Raghu wish to buy a laptop. He can buy it by paying Rs. 40,000 cash or by giving it in 10 installments as Rs. 4800 in the first month, Rs. 4750 in the second month, Rs. 4700 in the third month and so on. If he pays the money in this fashion, find total amount paid in 10 installments.  
**(OR)**
- b) Rekha has 15 square colour papers of sizes 10 cm, 11 cm, 12 cm, ..., 24 cm. How much area can be decorated with these colour papers?
- 26) a) Find the sum of all natural numbers between 300 and 600 which are divisible by 7.  
**(OR)**
- b) Find the sum of the series  $(2^3 - 1) + (4^3 - 3^3) + (6^3 - 15^3) + \dots$  to (i) n terms, (ii) 8 terms

**AL THE BEST**

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