THE TALENT COACHING CENTRE, MAGUDANCHAVADI

TWO MARKS

Date : 20-Jun-19

10th Standard 2019 EM

Maths

Reg.No. : | | | | | | |

Time : 01:30:00 Hrs

Total Marks : 90

52 x 2 = 104

1) We have 34 cakes. Each box can hold 5 cakes only. How many boxes we need to pack and how many cakes are unpacked?
2) Find the quotient and remainder when a is divided by b
   a=−12, b=5
3) Show that the square of an odd integer is of the form 4q + 1, for some integer q.
4) If the Highest Common Factor of 210 and 55 is expressible in the form 55x - 325, find x
5) Find the greatest number that will divide 445 and 572 leaving remainders 4 and 5 respectively.
6) Find the HCF of 396, 504, 636.
7) Find the remainders when 70004 and 778 is divided by 7
8) Determine the value of d such that $15 \equiv 3 \pmod{d}$.
9) Find the least positive value of x such that
   $67 + x \equiv 1 \pmod{4}$
10) Solve $8x \equiv 1 \pmod{11}$
11) Compute x, such that $10^4 \equiv x \pmod{19}$
12) Find the number of integer solutions of $3x \equiv 1 \pmod{15}$.
13) A man starts his journey from Chennai to Delhi by train. He starts at 22.30 hours on Wednesday. If it takes 32 hours of travelling time and assuming that the train is not late, when will he reach Delhi?
14) Kala and Vani are friends. Kala says, “Today is my birthday” and she asks Vani, “When will you celebrate your birthday?” Vani replies, “Today is Monday and I celebrated my birthday 75 days ago”. Find the day when Vani celebrated her birthday.
15) Check whether the following sequences are in A.P. or not?
   x+2, 2x+3, 3x+4, ...
16) Write an A.P. whose first term is 20 and common difference is 8.
17) Find the 15^{th}, 24^{th} and n^{th} term (general term) of an A.P. given by 3, 15, 27, 39
18) Find the number of terms in the A.P. 3, 6, 9, 12,…, 111.
19) Determine the general term of an A.P. whose 7th term is -1 and 16th term is 17.
20) If l^{th} , n^{th} and nth terms of an A.P are x, y, z respectively, then show that
   x (m -n) + y (n -1) + z (l -m) = 0
21) In an A.P., sum of four consecutive terms is 28 and their sum of their squares is 276. Find the four numbers.
22) A mother devides 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.
23) Which of the following sequences form a Geometric Progression?
   7,14,21,28,.... ,
24) Find the geometric progression whose first term and common ratios are given by
   a = -7, r = 6
25) Find the 8th term of the G.P 9,3,1,....
26) In a Geometric progression, the 4^{th} term is $\frac{8}{9}$ and the 7th term is $\frac{64}{243}$. Find the Geometric Progression.
27) The product of three consecutive terms of a Geometric Progression is 343 and their sum is $\frac{91}{3}$ .Find the three terms.
28) The present value of a machine is Rs.40,000 and its value depreciates each year by 10%. Find the estimated value of the machine in the 6th year.
29) Find the value of
   1 + 2+ 3 + ...+50

30) Find the sum of
1+3+5+..+to 40 terms

31) Find the sum of
$1^2+2^2+...+19^2$

32) Find the sum of
$1^3+2^3+3^3+..+16^3$

33) if 1+2+3+...+n = 666 then find n.

34) Find the quotient and remainder when a is divided by b
a=17

35) Find the quotient and remainder when a is divided by b
a=−19, b=−4

36) Find the least positive value of x such that
$98 \equiv (x + 4) \pmod 5$

37) Check whether the following sequences are in A.P. or not ?
2,4,8,16,

38) Check whether the following sequences are in A.P. or not?
$3\sqrt{2}, 5\sqrt{2}, 7\sqrt{2}, 9\sqrt{2}$,.....

39) If l^{th} , n^{th} and nth terms of an A.P are x, y, z respectively, then show that
(x - y)n + (y + z)l + (z - x)m = 0

40) Which of the following sequences form a Geometric Progression?
$\frac{1}{2}$,1,2,4,....

41) Which of the following sequences form a Geometric Progression?
5,25,50,75

42) Find the geometric progression whose first term and common ratios are given by
a = 256 , r = 0.5

43) Find the value of
16 + 17 +18 + ...+75

44) Find the sum of
2+4+6+..+80

45) Find the sum of
1+3+5+..+55

46) Find the sum of
$5^2+10^2+15^2+...+105^2$

47) Find the sum of
$15^2+16^2+17^2+..+28^2$

48) Find the sum of
$9^3+10^3+„„+21^3$

49) Use Euclid's algorithm to find the HCF of 4052 and 12756.

50) Show that any positive odd integer is of the form 4q + 1 or 4q + 3, where q is some integer.

51) Find the LCM and HCF of 6 and 20 by the prime factorisation method.

52) Prove that $\sqrt{3}$ is irrational

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