VELAMMAL MATRICULATION HIGHER SECONDARY SCHOOL, CHENNAI-37

HIGH SCHOOL COMPARTMENT

X STD OBJECTIVES QUESTIONS (MATHS)

**I. Choose the correct answer:**

1. If (AxB)=6 and A={1,3} then (B) is \_\_\_\_\_\_\_\_\_\_.

a) 1 b) 2 **c)3** d) 6

2. A={a,b,p}, B={2,3}, C={p,q,r,s} then [(AUC)) xB] is \_\_\_\_\_\_\_\_\_\_\_.

a) 8 b) 20 **c) 12** d) 16

3. If A={1,2}, B={1,2,3,4}, C={5,6} and D={5,6,7,8} then state which of the following is true?

**a) (AxC) (BxD)** b) (BxD) (AxC) c) (AxB) (AxD) d) (DxA) (BxA)

4. If there are 1024 relations from a set A={1,2,3,4,5} to a set B, then the number of

elements in B is \_\_\_\_\_\_\_.

a) 3 **b) 2** c) 4 d) 8

5. The range of the relation R={(x,x2) / x is a prime number less than 13} is \_\_\_\_\_\_\_\_.

a) {2,3,5,7} b) {2,3,5,7,11} **c) {4,9,25,49,121}** d) {1,4,9,25,49,121}

6. If the ordered pairs (a+2, 4) and (5, 2a+b) are equal then (a,b) is \_\_\_\_\_\_\_\_\_.

a) (2,-2) b) (5,1) c) (2,3) **d) (3,-2)**

7. Let (A)=m and (B)=n then the total number of non-empty relations that can be

defined from

A to B is \_\_\_\_\_\_\_\_\_.

a) mn b) nm **c) 2mn-1** d) 2mn

8. Euclid’s division lemma states that for positive integers a and b, there exist unique

integers q and r such that a = bq + r, where r must satisfy.  
(1) 1 < r < b (2) 0 < r < b **(3) 0 < r < b** (4) 0 < r < b

9. Using Euclid’s division lemma, if the cube of any positive integer is divided by 9 then

the possible remainders are  
(1) **0, 1, 8** (2) 1, 4, 8 (3) 0, 1, 3 (4) 1, 3, 5

10. If the H.C.F of 65 and 117 is expressible in the form of 65m -117 , then the value of m is

……………….  
(1) 4 **(2) 2** (3) 1 (4) 3

11. The sum of the exponents of the prime factors in the prime factorization of 1729 is  
(1) 1 (2) 2 (**3) 3**  (4) 4

12. The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is  
(1) 2025 (2) 5220 (3) 5025 **(4) 2520**

13. Given F1 = 1, F2 = 3 and Fn = Fn-1 + Fn-2 then  
(1) 3 (2) 5 (3) 8 **(4)11**

14. 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 …………..  
(1) 4551 (2) 10091 **(3) 7881** (4) 13531

15. If 6 times of 6th term of an A.P is equal to 7 times the 7th term, then the 13th term of the

A.P. is  
**(1) 0** (2) 6 (3) 7 (4) 13

16. An A.P consists of 31 terms. If its 16th term is m, then the sum of all the terms of this A.P.

is …………..  
(1) 16m (2) 62m **(3) 31m** (4) 31/2 m

17. A system of three linerar equations in three variables is inconsistent if their planes

a) intersect only at a point b)intersect in a plane

c) coincides with each other **d) do not intersect**

18. The solution of the system x + y -3z = -16, -7y + 7z = 7 3z = 9 is

**a) x = 1, y= 2, z = 3** b) x = -1, y= 2, z = 3

c) x = -1, y= -2, z = 3 d) x = 1, y= -2, z = 3

19. If (x-6) is the H.C.F of x2 -2x -24 and x2 –kx -6 then the value of k is

a) 3 **b) 5**  c) 6 d)8

20. is

**a)**  b) c) d)

21. y2 + is not equal to

a) **b) ( y+ )2** c) ( y - )2 + 2 d) ( y + )2 – 2

22. - gives

a) b) **c)**  d)

23. The CSA of a right circular cone of height 15cm and base diameter 16cm is **136cm2**.

a) 60cm2 b) 68cm2 c) 120cm2 d) 136cm2

24. If two solid hemispheres of same base radius r units are joined together along their bases, then curved surface area of this new solid is **4r2 sq.units.**

a) 4r2 sq.units b) 6r2 sq.units c) 3r2 sq.units d) 8r2 sq.units

25. The height of a right circular cone whose radius is, 5cm and slant height is 13cm will be **12cm**.

a) 12 cm b) 10 cm c) 13 cm d) 5cm

26. If the radius of the base of a right circular cylinder is halved keeping the same height, then the ratio of the volume of the cylinder thus obtained to the volume of original cylinder is **1:4.**

a) 1:2 b) 1:4 c) 1:6 d) 1:8

27. The total surface area of a cylinder whose radius is of its height is .

a) b) 24h2 sq.units. c) d)

28. In a hollow cylinder, the sum of the external and internal radii is 14cm and the width is 4cm. If its height is 20cm, the volume of the material in it is **1120cm3.**

a) 5600 cm3 b) 1120 cm3 c) 56 cm3 d) 3600 cm3

29. If the radius of the base of a cone is tripled and the height is doubled then the volume is **made 18 times**.

a) made 6 times. b) made 18 times c) made 12 times d) unchanged

30. The total surface area of a hemisphere is how much times the square of its radius **3.**

a) b)4 c) 3 d)2

31. A solid sphere of radius xcm is melted and cast into a shape of a solid cone of same radius. The height of the cone is **4xcm.**

a)3x cm b) x cm c) 4x cm d) 2x cm

32. A frustum of a right circular cone of height 16cm with radii of its ends as 8cm and 20cm. Then the volume of the frustum is **3328cm3.**

a) 3328cm3 b) 3228cm3 c) 3240cm3 d) 3340cm3

33. A shuttle cock used for playing badminton has the the shape of combination of

a) a cylinder and a sphere b) a hemisphere and a cone

c) a sphere and a cone **d) frustum of a cone and a hemisphere**

34. The volume (in cm3) of the greatest sphere that can be cut off from a cylindrical log of wood of base radius 1cm and height 5cm is .

a) b) c) 5 d)

35. The height and the radius of the cone of of which the frustum is a part are h1 units and r1 units respectively. Height of the frustum is h2 units and radius of the smaller base is r2 units. If h1:h2 = 1:2 then r2:r1 is **1:2**

a) 1:3 **b)1:2**  c) 2:1 d) 3:1

36. The ratio of the volumes of a cylinder, a cone and a sphere, if each has the same diameter and same height is **3:1:2**.

1. 1:2:3 b) 2:1:3 c)1:3:2 d) 3:1:2