**Dnyanamitra Academy**

**26/03/2020 Vectors Marks:-120**

1) ABCD is a parallelogram with AC and BD as diagonals. Then  -  =

a)  b) c) d) 

2) Let be unit vectors such that  Which one of the following is correct? a)  b) 

c)  d)  are mutually perpendicular.

3) Let  be three non-zero vectors, which are pair-wise non-collinear. If is collinear with  is collinear with  is a)  b)  c)  d) 

4) Let then the point of intersection of the lines and is a) ( - 1, 1, 1) b) ( 3, -1, 1) c) ( 3,1, - 1) d) ( 1, - 1, - 1)

5) If and is a unit vector perpendicular to the vector and coplanar with then a unit vector perpendicular to both is: a)  b)  c)  d) 

6) The scalar is equal to :- a) 0 b)c)d) none

7) The scalar triple product of three vectors  vanishes if :-

a)  b) the vectors are mutually perpendicular to each other

c) any two of the vectors are equal d)

8) If , then:- a) b) c) d)

9) If the points P  and R  are collinear, where  are three non coplanar vectors, then the value of t is a) - 2 b) 3 c) - 3 d) 2

10) A ( 4,3,5), B ( 0, - 2, 2) and C ( 3, 2, 1) are three points. The coordinates of the point in which the bisector of meets the side is

a)  b)  c)  d) 

11) The points with position vectors  & a  are collinear if a =

a) 2 b) 4 c) 8 d) 10

12) The value of b such that the scalar product of the vector  with the unit vector

parallel to the sum of the vectors  and b  is one is:-

a) - 2 b) - 1 c) 2 d) 4/3

13) Let and a unit vector  be coplanar. Ifis perpendicular to , then  = a) b) c) d)

14) The values of x for which the angle between the vectors  and is acute and the angle between the vector  and y – axis lies between  and  are a) < 0 b) > 0 c) 2, 3 d) - 1, - 2

15) Four points A, B, C, D with position vectors  respectively are such that . Then the position vector of intersection of lines AC and BD is a)  b)  c)  d) 

16) Diagonals of a parallelogram lie along the vectors  and . The area of the parallelogram (in square units) is :- a) b) c) d) 8

17) Let ,  and  be three non – zero vectors, no two of which are collinear and the vector +  is collinear with  while +  is collinear with , then + + =

a)  b)  c) d) none

18) The number of vectors of unit length perpendicular to vectors  and , is

a) 1 b) 2 c) 3 d) infinite

19) ABCD is a quadrilateral with and If its area is times the area of the parallelogram with AB,AD as adjacent sides, thenis:

a) 5 b) 5/ 2 c) 1 d) 1/ 2

20) If  = a) 3 b)  c) 0 d) Meaningless

21) The points will be collinear if a)  b) c)  d) 

22) If A (a,2,2), B(a,b,1) and C(1,2,-2) are the vertices of triangle ABC and G(2,1,c) is its centroid, then values of ‘a’, ‘b’ and ‘c’ are

a)  b) c) d)

23) If and for some non-zero vectors, then the true statement is a)  b) c) d) None of these

24) If and , then the value of the parallelepiped with co-terminus edges is a)1 b) 5 c) 8 d) 16

25) Consider points A,B,C, and D with position vectorsrespectively. Then, ABCD is a a) parallelogram but not a rhombus b) square c) rhombus d) rectangle

26) If the position vectors of the vertices A,B, C of ΔABC are respectively then the position vector of the incentre of ΔABC is

a)  b)  c) d)

27) Two vectors  and are parallel and have same magnitude. Then a) they have the same direction b) they are equal c) they are not equal d) they may or may not be equal

28) Which of the following is not a unit vector for all values of  a)  b) c)  d) 

29) Ifand  are unit vectors then angle between and is

a) 900 b) 1200 c) 4500 d) 1350

30)The perimeter of the triangle whose vertices have the position vector andis given by a)  b)  c) d)

31) If A= (5, 1, - 2), B=( 1, - 3, 2) and C = ( 2, - 2, 1) are collinear, then the ratio in which C divides AB is a) 3 : 1 externally b) 3 : 1 internally c) 4 : 1 externally d) 4 : 1 internally

32) ABCD is a quadrilateral and E is the point of intersection of the lines joining the midpoints of opposite sides. If then x = a) 3 b) 4 c) 7 d) 9

33) If D,E,F are the mid points of the sides, BC CA and AB respectively of ΔABC then = a)  b)  c)  d) 

34) If ABCD is a square, then= a) b)  c)  d) 

35) In a triangle ABC, if then  equals

a) b) c) d)

36) Let be three non-zero vectors such that no two of them are collinear and If  is the angle between the vectors , then the value of  is a)  b)  c)  d)  37) If are pair-wise mutually perpendicular vectors of equal magnitude, then the angle whichmakes with each of is a) b) c) d) 

38) If  are vertices of a triangle then it is a) only isosceles b) only right angled c) equilateral d) isosceles right angled

39) If, and  is equally inclined to co – ordinate axes, then vector = a)  b)  c)  d) 

40) If are three non-coplanar vector then = a) 0 b)  c)  d) -

41) If and  are non- coplanar vectors and then is equal to a) b) c) d)

42) If are any three vectors which of the following statement true? a) b) c)

d) represents the volume of the parallel epiped with coterminous edges.

43) The volume of parallelepiped whose coterminous edges are is a) 91 cu. units b) 93 cu. units c) 96 cu. units d) 74 cu. units

44) If the vectorsandare linearly dependent vectors and  a) b) c) d)

45) If A are two vertices A and B and Gis the centroid of the, then the midpoint of side BC is a) b) c) d)

46) Let .where O,A,C are non collinear points. Let p denote the area of the quadrilateral OABC and q denote the area of the parallelogram with OA and OC is adjacent sides. Then = a) 4 b) 6 c)  d) 

47) If  and the vectors  are coplanar then = a) 0 b) – 2 c) – 3 d) – 1

48) The position vectors of the points A and B are respectively. P divides AB internally in the ratio 3 : 2, Q is the midpoint of AP, then position vector of Q is a) b) c) d)  49) The vector lies in the plane of the vectors  and and biscets the angle between  and  Then which one of the following gives possible values of  a)  b) c)  d)  **50)= a) 0 b)  c)  d)**

51) If A,B,C are the vertices of a triangle whose position vectors are  and G is the centroid of the triangle ABC, then  a) b) c) d) 52) In a hexagon ABCDEF with centre at = a)  b)  c)  d) 6

53) The position vectors of the point which divides the join of points with position vectors and in the ratio 2 : 1 is…. a)  b) c) d)

54) If a vector makes angles from OX, OY and OZ axes respectively, then  = a) – 1 b) 1 c) 2 d) – 2

55) If a line makes angle 900, 600 and with x, y and z axis respectively, where is acute, then = ….. a) 800 b) 700 c) 500 d) 300

56) If the two vectors andrepresent the two side vectors respectively of triangle ABC. Then the length of the median through A is a)  b)  c)  d)  57) The angle between xy-plane and vector is a)  b)  c)  d) 

58) A vector of magnitude 3 units which is perpendicular to vectorsis a) b) c)  d)  59) If we divide vector  as a sum of two vectors in which one vectors is parallel to and other is perpendicular to = a)  b) c)  d)  60) If then =…..a) b)  c) d) 0