**27/03/2020 ATHAVALE CLASSES**

**Time:- 45 min 3D, Line ,Plane, Marks:- 120**

1) The direction ratios of a line passing through the points A(2,3,4) and B(-4,5,0) are - a) – 1, 3, 4 b) –6, 2, –4 c) – 5, 3, – 6 d) – 2, – 3, – 5

2) The equation of the plane passing through points , and parallel to the x-axis a)  b)  c)  d)  3) Number of lines which makes angles  with any two of *OX, OY, OZ*, are a) 0 b) 1 c) 2 d) infinite

4) If a line is equally inclined to co – ordinate axes, then its each direction angle is of measure a) b) c)  d) 

5) If *P* is ( - 1, 1, 2), then direction cosines of line *OP* are a) b) c) d) -1, 1, 2

6) The direction ratios of line perpendicular to the lines whose direction ratios are 3, - 2, 1, & 2, 4, - 2 are a) 2, 0, 1 b) 1, 0, 2 c) 0, 1, 2 d) -1, 2, 0

7) The vector equation of a plane which is at a distance of 5 units from the origin and has 2, 1,as the direction ratios of a normal to it is a)  b)  c)  d)  8) If the line *OP* of length r makes an angle  with the *X* – axis, and lies in the *ZX*- plane, then the co-ordinates of P are a) b) c) d)

9) If A  (- 3, 4, 8 ) and B  ( 5, - 6, 4 ) are two points then the ratio in which pts A and B are divides XY plane is a)  b) c)  d) 

10) If are the angles which a line makes with *OX, OY* and *OZ*, then = a) 1 b) 2 c) 3 d) 4

11) The equation of line passing through the point (a,b,c) and parallel to z – axis is :- a) b) c) d)

12) Foot of the perpendicular drawn from the point ( 3, - 1, 11) to the line is the point a) ( 3,5,7) b) ( 0, 2, 3) c) ( 2, 3, 4) d) ( 2, 5, 7)

13) Shortest distance between the linersis a) b)  c)  d) 

14) Equation of the line passing through and perpendicular to Z – axis, are a) b) c) d)

15) Equation of a plane S is 3x + 2y – 4z + 10 = 0. If A = (2, 1, –2) and B = (–2, –1, –2) then

a) A and B lie on the same side of the plane S b) A and B lie on the opposite sides of the plane S

c) A lies in S but B does not d) B lies in S, but A does not

16) The angle between a line with direction ratios proportional to 2,2,1 and a line joining ( 3,1,4) to ( 7,2,12) is a) b) c) d) none of these

17) The co-ordinates of a point on the line at a distance from the point (2, - 2, 0) is a) (-11,-17,3) ,(-7,-13,-3) b) (17,-11,3), (7,13,3)

c) (11,-17,3), (-7,13,-3) d) (-11,-17,-3), (-7,-13,-3)

18) If the plane= 21 andare perpendicular, then m = ------

a) 2 b) – 2 c) 3 d) –3

19) The planecuts the three axes in P, Q, R then the area of the is equal to a)units b) units c) units d) units

20) The p.v. of the point of intersection of lineand the plane

is a) b) c) d)

21) If A = (3, 2 – 1) and B = (1, 4, 3) then equation of the plane which bisects seg AB perpendicularly is

a) 2x + 3y – 5z – 8 = 0 b) x – y – 2z + 3 = 0 c) 3x – 2y – z + 1 = 0 d) x + y + z – 6 = 0

22) A plane makes positive intercepts of unit length on each of the axes of x and y respectively. If it passes through the point (1, –1, 2) and makes angle  with the x – axis, then  = - - - a) b)  c)  d) 

23) A plane meets the co-ordinate axes at A,B,C such that the centroid of the triangle is ( 3,3,3). The equation of the plane is: a) b)  c)  d)

24) The two lines are perpendicular to each other if: a)  b)  c) d)  25) The foot of the perpendicular from ( 0,2,3) to the lineis: a) (3, 2, - 1) b) ( - 2, 3, 4) c) (2, - 1, 3 ) d) ( 2, 3, - 1)

26) Let P ( 3, 2, 6) be a point in space and Q be a point on the line  then the value of for which the vector is parallel to the plane is : a) b)  c) d) 

27) The lines and are a) parallel b) perpendicular c) coplanar d) none of these

28) The image of the line in the plane:is the line: a) b)  c) d)

29) The distance of the point (1,0,2) from the point of intersection of the lineand the plane, is a) b) 8 c)  d) 13

30) The angle between the lines whose direction cosines satisfy the equations is : a)  b) c) d)

31) If are three vertices of paralleogram ABCD, then the angle between its diagonals is a) b) c) d)

32) Direction cosines of a line, for which are a)  b)  c)  d) 

33) If a line is inclined at 600 and 300 with *X* – and *Y* – axes, then the angle which it makes with *Z* – axis is a) 0 b)  c)  d) 

34) Direction cosines of a line which lies in *ZOX-* plane, and makes an angle of 300 with *OZ*, are a)  b)  c) 1,0,0 d) 

35) If d1,d2,d3 denote the distances of the plane from the planes and respectively, then a) b)  c) d) 

36) If is a point in space at a distance r from the origin O, then the direction cosines of the line OP are a) b) c) d) 

37) The direction ratios of normal to the plane through ( 1,0,0), (0,1,0) which makes an angle with the plane are proportional to a)  b) c) d)

38) If A and B are foot of perpendicular drawn from point Q(a, b, c) to the planes YZ and ZX, then equation of plane through the points A,B and O is \_\_\_\_\_\_\_

a)  b) c) d) 

39) If the line of intersection of the planesis parallel to the vector : a) b) c)  d) 

40) The acute angle between the line joining the points (2,1-3), ( -3, 1, 7) and a line parallel to  through the point ( -1, 0, 4) is a) b) c) d)

41) The angle between the straight linesand is

a) 450 b) 300 c) 600 d) 900

42) If direction ratios of two lines are 5, -12, 13 and -3, 4,5 then the angle between them is a)  b)  c)  d)

43) The point of intersection of lineandis a) (1, 3, 1) b) ( 2, 3, 2) c) ( 2, 1, 2) d) ( 0, 1, 4)

44) Let a, b and c be three real numbers satisfying If the point lies on the plane , then the value of is a) 0 b) 12 c) 7 d) 6

45) Vector equation of the line 6x – 2 = 3y + 1 = 2z – 2 is a)  b)  c) d)

46) Two points on the line on either side of the point (2,-3, - 5) and at a distance of 3 units from it are

a)( 3,5,3)(1,1,7) b) ( 3,-5,-3)(1,-1,-7) c) ( -3,-5,3)(-1,-1,7) d) ( -3,5,-3)(1,-1,7)

47) The equation of straight line passing through the points (a,b,c) and (a-b,b-c,c-a) is a) b) c) d)

48) A variable plane at a distance of 1 unit from the origin cuts the co-ordinate axes at A,B and C satisfies the relation then the value of k is: a) 3 b) 1 c) d) 9

49) Find the vector equation of the line passing through the point (1,-2,3) and parallel to the line a) b) c)  d)

50) If a line makes angles with the four diagonals of a cube, then the value ofis a)  b)  c) variable d) none of these

51) If the distance between the plane and the plane containing the lines and is , thenis equal to a) 3 b) 5 c) 6 d) 9

52) The equation of the plane is.Find the direction cosines of the normal to the plane. a)b) c)d)

53) The acute angle between the line joining the points A(2,1,-3), B( 1, - 1, 2) and a line  a)  b)  c) d)

54) The equation of the plane through the point (1, 2,3)and parallel to the plane x + 2y + 5z = 0 a) (x –1) + 2 (y – 2)+ 5(z – 3) =0 b) x + 2y + 5z = 14 c) x +2y + 5z = 6 d) 2x + y + z = 7

55) The plane E meets the co-ordinate axes in A, B, C such that the centroid of ABC is (1,r, r2) the equation of E is

a) b) c) d) 

56) If the three planes andcontain a common line, then (a, b) is equal to a)  b) c) d)

57) If the acute angle between the planes and isthen m = a)  b)  c)  d) 

58) Equations of a line L are  and the vector equation of the plane S is  Then:- a) L // S b) L ┴ S c) L lies in S d) L is oblique to S

59) If the straight line,with parameters

*s* and *t* respectively, are coplanar, then equals: a) – 2 b) – 1 c)  d) 0

60) The equation of the plane passing through the point  and normal to the line joining the points and is a)  b)  c)  d) 