**ALVA’S PRE –UNIVERSITY COLLEGE , MOODBIDRI**

**JEE/NEET CRASH COURSE 2019-20**

**MATHEMATICS**

TOPIC : THREE DIMENSIONAL GEOMETRY

ANSWERS:

1) Ans: c  , 

2) Ans:b

C divides AB in the ratio 

3) Ans: d

 C= 3G-A-B

4) Ans: d

d.r's of line are 3,1,0 d.r's of z-axis are 0,0,1 clearly ,3(0)+1(0)+0(1) = 0

5) Ans:c

equation of line is  equation of plane is x+5y+z =5

1(1)+(-1)5+4(1)=0 line is parallel to plane

required dist= perpendicular dist from (2,-2,3) to x+5y+z-5 = 0

6) Ans: d



7) Ans:b

d.r's of line joining (0,0,0) and (1,2,3) are 1,2,3

=> d.r's of normal to the plane is also 1,2,3

8) Ans:b

(1,2,0) lies on both the planes

9) Ans:d

 => 6=  => k=3 or k = -9

10) Ans:b

shortest dist = 0 => =0

=>  => k=9/2

11)Ans: a

d.r 's of PQ are 2,2,2 mid point of PQ is (2,3,4)

equation of plane is 2(x-2) +2(y-3)+2(z-4) =0 => x+y+z= 9

12) Ans: b

equation of plane in intercept form is  . Area = 

13) Ans: a

d.r's of required line is 3,5,6 and passes through (-2,4,-5)

14) Ans:a 

15) Ans: b

16) Ans:c

substitute both the points

17) Ans: a

18)Ans: b

line passes through (2,1,-2), substitute this point in plane 2α+β+5 = 0

also line parallel to plane => 3(1)+(-5)3+2(-α) =0 => α=-6 ,β=7

19) Ans:b

d.r's of L are 3,2,-1 d.r's of π are 1,-2,-1 => 3×1+2×-2+1 = 0

L passes through (1,-1,3) . substitute in π ,satifies

20) Ans:c

plane passes through (1,3,-1) and (0,-1,2)

21) Ans : d

equation of plane is (3x-y)+λ(2x+y) = 0

i.e, 3x+(λ-1)y+2λz = 0 is perpendicular to 3x+4y-z-8 = 0 => λ=-5/2

22) Ans : a

23) Ans: a

l(x-1) +m(y-2)+n(z-3) =0

24) Ans: c

equation of plane is (3+2λ)x+(2-3λ)y+(1-λ)z = 0 it is parallel to 5x-y =0

=>  => λ =1

25) Ans:c

equation of plane is 

26) Ans:a

direction ratios of normals are 1,-1,1 and 3,-2,-1

cosƟ =  =

27) Ans: b

28) Ans: c

any point on the line (x,y,z) = (3λ+1,2λ+2,λ-1)

this point lies on the plane =>λ= 1 => point of intersection is (4,4,0)

dist = 

29) Ans:b

30) Ans:c

equation of the plane is 

=>  => 

31) Ans: b

x+y-z -1 =0 is perpendicular2 to given plane

32) Ans: d

D.R of normal to plane are  i.e, 1,1,1

Mid point of (1,2,3) and  is 

The equation of the pane is x+y+z =1

33) Ans : b

equation of plane is =0

34) Ans: a

cosƟ = =

35) Ans: a

equation of plane parallel to y-axis is ax+cz+d = 0 , this passes through (0,0,3)

and (4,0,0)

36) Ans: c

-y1:y2

37) Ans:c

centroid = 

38) Ans:c

2x+3y+4z+3(5) = 0

39) Ans:d

parallel dist = 

40) Ans:c

41)Ans: a

42) Ans: b

the point on y-axis is (0,4,0)

length is 

43)Ans: a

centroid = (0,0,0) =

44) Ans: c

45) Ans: a

46)Ans: b d.r's are proportional

47)Ans: d

48) Ans:d

d.r's of AB are 3,3,4 d.r's of CD are 6,6,8

=> d.r's are proportional =>AB is parallel to CD

49)Ans: a

50)Ans: a

51)Ans: b d.r's of normal are 3,-4,7 . Equation of plane is 3x-4y+7z+d = 0,this

passes through (2,3,-1) => d =13

required distance = 

52)Ans: a

53) Ans: c 3.2+4.1+5.-2 = 0

54)Ans: c d.r's of normal are 2,-1,2 and d.r's z-axis are 0,0,1



55)Ans: d d.r's of normal are 2,-1,1 and d.r's of line are 1,-2, a

=> 2x1-1x-2+1xa = 0 => a = -4

56)Ans: c

-z1:z2

57)Ans: b

(-x,y,z)

58) Ans:c

required point of the form (x,y,0)

XY plane divides AB in the ratio -z1 :z2 , use section formula

59) Ans :d



60) Ans: b \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*