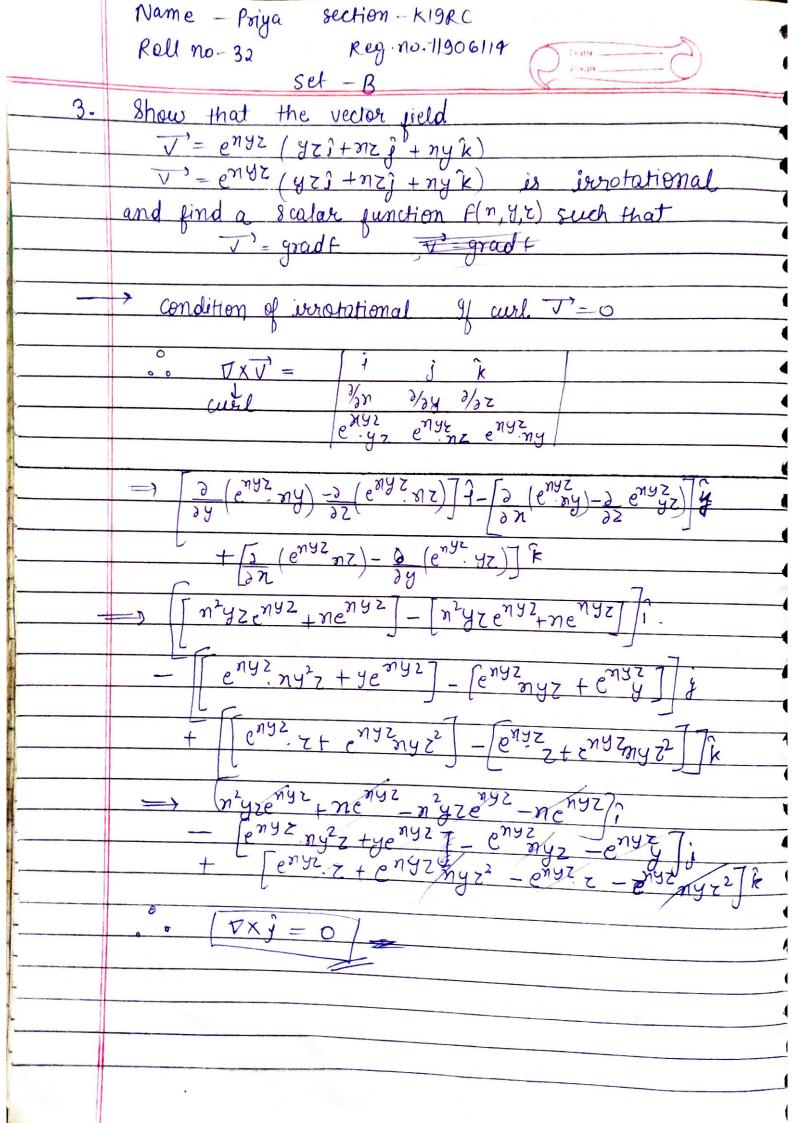


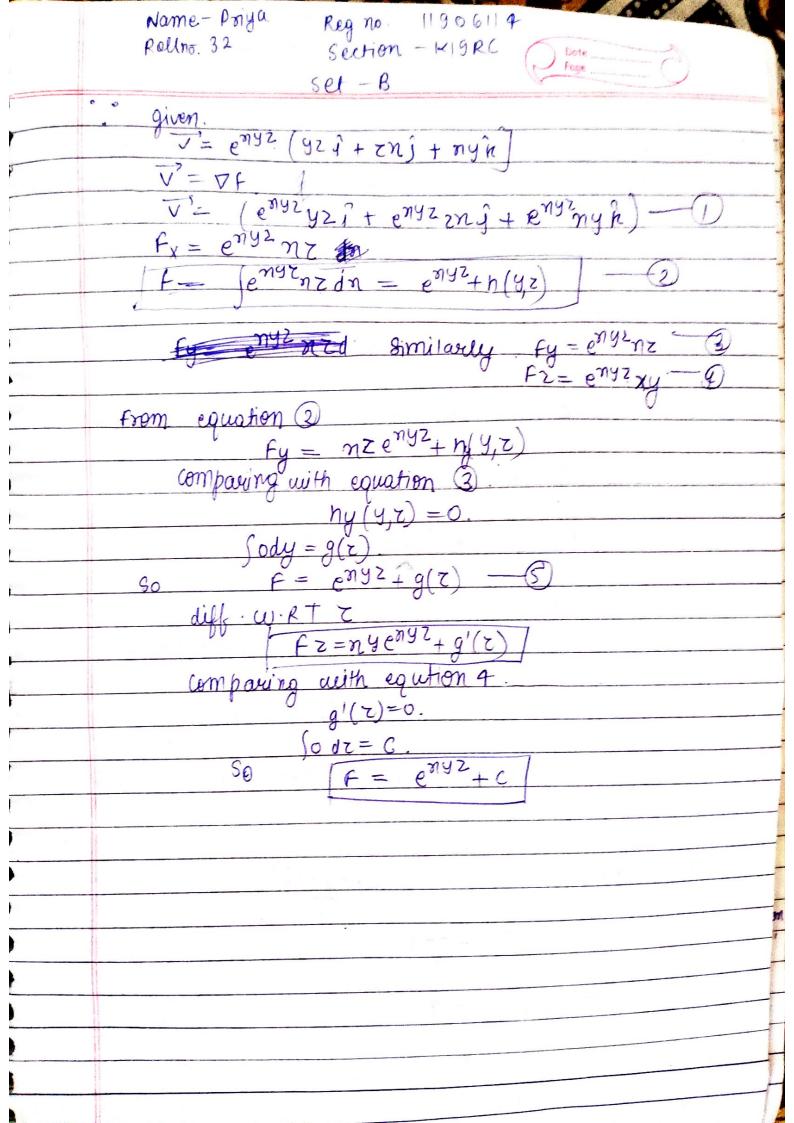
```
section - KIGKE
               Name - Priya
             Roll no - 32 Reg no. - 11906119
                                       SET-B
find the directional derivative of f(n,y,z) = n^2y - y^2z - nyz

f(n,y,z) = n^2y - y^2z - nyz at point (1,-1,0) = n^2y - y^2z - nyz

at point (1,-1,0), (1,-1,0) in the direction

(\hat{i}-\hat{j}+2\hat{k}) (\hat{i}-\hat{j}+2\hat{k})
                f(n,y,z) = n^2y - y^2z - nyz at (1,-1,0) in the direction (i-\hat{j}+2\hat{k})
          Given
                 find direction deservative
                       D.O= (VF)p.b
                      \frac{P(1,-1,0)}{5} = \hat{1} - \hat{j} + 2\hat{k}
\hat{5} = \hat{1} - \hat{j} + 2\hat{k}
\hat{5} = \hat{1} - \hat{j} + 2\hat{k}
                                   3 (n<sup>2</sup>y-y<sup>2</sup>z-nyz)+ 3y (n<sup>2</sup>y-y<sup>2</sup>z-nyz)+
                                            \frac{3}{32} \left( n^2 y - y^2 z - ny z \right) \hat{k}
                                   (2ny-7z)\hat{i} + (n^2-2yz-nz)\hat{j} + (-y^2-ny)\hat{k}
                                   P.0=
```





Name-Priya Reg. no. 11306114 Prote Rall no. 32. Section. KIBRC set - B Solve laplace $eq^n \frac{\partial^2 u}{\partial n^2} + \frac{\partial^2 u}{\partial y^2} = 0$ subject to conditions u(0,y) = u(1,y) = u(1,0) = 0 and $u(n,q) = \sin n n$ 4(0,8) = 4(1,8) = 4(1,0) =0 4 even egn is = 24 + 24 = 0 -Toual & solm . U(n,y) = X(n) Y(n) - (2) Substitute the value (2) in eq. (1) " x " + x y !! = 0 $X'' - \lambda X = 0$ $Y'' - \lambda y = 0$ case 1 $s-g_{\downarrow}$ $\lambda = p^2$. $x^{11} - p^2 x = 0.$ $x = c_1 e^{pn} + c_2 e^{-pn}$ to $\rho^2 y' = 0$ $y = (3 \cos \rho y + \frac{(4 \sin \rho)}{(2 \cos \rho y + (4 \sin \rho y))}$ $u(\eta, y) = (c_1 e^{\rho \eta} + c_2 e^{-\rho \eta}) (c_3 \cos \rho y + c_4 \sin \rho y)$ 4 (0, y) =0 (citiz) (cz cospy + (qxinpy) By C1+C2 => C1 = -C2 u (1,y)=0 => ((,eip + C,e-ip) (300spy + cq sinpy) 0 = c/ceip- e-ip) (c3cospy + casinpy) C1=0 and consequently G=0 u(n,y)=0

```
Name - Priya Reg no- 11906119
                   gertion - KIGRC Page
SET-B
    Rell no - 32
          4(m,y)=0;
Case 2: - 9/ 1=0
             x^{11}=0 \Rightarrow x = C_1 + C_2 \pi
y^{11}=0 \Rightarrow y = C_3 + C_4 y
     · u(n,y) = (4+61) (63+644)
            u(0,y) =0 => <1((3+C+y)
          4(2,8)=0
              C, & ( C3+ C44) => C,=0
               U(n,y)=0
 Case 3 °- 9 \lambda = -b^2

\chi'' + p^2 \chi = 0
           X = C, wspn + Ssinpn
    y'' - p^{2}y = 0.
Y = c_{3}e^{py} + c_{4}e^{-py}
u(\pi, y) = (c_{4}cosPn + QsinPn)(c_{3}e^{py} + c_{4}e^{-py})
           u(0,y)=0
c, €c3 € py + (qe-py)
                     \Rightarrow c_1 = 0
      a(1,y)=0
Casinpl (czepy+cze-py
                   Sinpl = 0
                     sinpl = sinna
                     P= nx
  U(7,0) =0
     Cosinpor (C3+C4)
```

