<table>
<tr><th>Q. No</th><th>Question</th><th>Marks</th></tr>
<tr><td></td><td>Consider a random variable X that follows Poisson distribution with mean as 4 then find the probability that<br>i) X takes a value less than 5<br>ii) X takes a value greater than 5<br>iii) X lies between 2 and 5</td><td>3 M</td></tr>
<tr><td></td><td>Consider the following probability distribution.<br>f(x, y) = $\frac{k}{2}e^{-(x+y)}, 0 < x < \infty, 0 < y < \infty$<br>i) Find k value<br>ii) Check whether x and y are independent or not.<br>iii) Find P(0 < x < 2 , 0< y < 5)<br>iv) P(0 < x < 2 / 0 < y < 5)</td><td>5 M</td></tr>
<tr><td></td><td>Let f(x) = k(x + 1)/2 where 0 < x < 2,<br>= 0,otherwise<br>Then find<br>i) k value<br>ii) P(1/2 < x < 2)<br>iii) P(X > ¼)</td><td>4</td></tr>
<tr><td></td><td>Consider the following probability distribution of X and Y.
<table>
<tr><th>Y</th><th colspan="4">X</th></tr>
<tr><th></th><th>0</th><th>1</th><th>2</th><th>3</th></tr>
<tr><td>0</td><td>0.05</td><td>0.25</td><td>0.05</td><td>0</td></tr>
<tr><td>1</td><td>0.05</td><td>0.15</td><td>0.05</td><td>0.05</td></tr>
<tr><td>2</td><td>0.10</td><td>0.15</td><td>0.10</td><td>0</td></tr>
</table>
i).Find marginal distribution of X<br>ii).Find marginal distribution of Y<br>iii).Find P( X < 2 / Y < 2)<br>iv). Find P( X < 2 / Y =1)</td><td>4</td></tr>
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