GOVT. ENGINEERING COLLEGE, THRISSUR

FOURTH SEMESTER B.TECH – SECOND SERIES EXAMINATION-JUNE 2020

MA 202- PROBABILITY DISTRIBUTIONS , TRANSFORMS AND NUMERICAL METHODS

(FOR CSE)

Answer all questions

Duration : 30 minutes Max Marks:20

<table>
<tr><th>Q. No</th><th>Questions</th><th>Mark</th><th>CO</th></tr>
<tr><td>1</td><td>Let X be a random variable with PDF given by
$$f(x)=\begin{cases} cx^2 & |x|\le 1 \\ 0 & otherwise \end{cases}$$
a. Find the constant c.
b. Find $E(X)$ and $Var(X)$.</td><td>4</td><td>2</td></tr>
<tr><td>2</td><td>In a normal distribution, 31% of the items are under 45 and 8% are over 64. Find the mean and standard deviation of the distribution.</td><td>6</td><td>2</td></tr>
<tr><td>3</td><td>Apply Gauss elimination method to solve the system
$$2x+2y+z=12$$
$$3x+2y+2z=8$$
$$5x+10y-8z=10$$</td><td>5</td><td>6</td></tr>
<tr><td>4</td><td>Evaluate $\int_1^7 f(t)dt$ using Simpson's rule, given
<table><tr><td>t</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>$f(t)$</td><td>81</td><td>75</td><td>80</td><td>83</td><td>78</td><td>70</td><td>60</td></tr></table></td><td>5</td><td>6</td></tr>
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