SESSIONAL EXAMINATION
DTC
THIRD SEMESTER [B.TECH] JAN'21

Paper Code:BSC-MATH-203G	**Subject: Mathematics-III**

Time: One Hour Thirty Minutes **Max. Marks: 30**

Note: Attempt any *three* questions including Q.no. 1 which is compulsory. All questions carry equal marks.

Q.1.Attempt any two questions from the following questions: (2 X 5 =10)

a. Solve [cosx tany+cos(x+y)] dx + [sinx sec^2y +cos(x+y)]dy=0

b. Solve $y'' - 2y' + 10y = 0$, given that y(0)=4, y'(0)=1

c. Solve by method of variation of parameters: $y'' + 4y = 4\ sec^2 2x$

d. Solve secx $\frac{dy}{dx}$ = y+sinx

e. Solve (x $y^3 + y$) dx + 2($x^2y^2 + x + y^4$)$dy = 0$

Q.2. (a) Solve $y'' + 2y' + 10y = e^{2x} - cos^2x$ (10)

OR

(b) Solve $x^2\ y'' - x\ y' - 3y = x^2 logx$ (10)

Q.3. (a) Solve (x^2y^2+xy) dx=dy (10)

OR

(b) Solve the following simultaneous equations: $\frac{dx}{dt} + 2y = e^t$, $\frac{dy}{dt} - 2x = e^{-t}$

(10)

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