SESSIONAL EXAMINATION
SKIT
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 xdy-ydx= $\sqrt{x^2+y^2}$

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

c. Solve by method of variation of parameters: $y''-6y'+9y=\frac{e^{3x}}{x^2}$

d. Solve $x^2y''+4xy'+2y=0$

e. Solve $(1+e^{x/y})dx+(1-\frac{x}{y})e^{x/y}dy=0$

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

OR

(b) Solve $(2x+3)^2y''-(2x+3)y'-10y=6x$ (10)

Q.3. (a) Solve $sec^2y\frac{dy}{dx}+xtany=x^3$ (10)

OR

(b) Solve $(x^4e^x-2mxy^2)dx+2mx^2y\,dy=0$ (10)

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

****