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Roll No .....

PY-201 (GS)

B.Pharmacy II Semester Examination, June 2020

Grading System (GS)

Advanced Mathematics

Time : Three Hours

Maximum Marks : 70

Note: i) Answer any five questions.
ii) All questions carry equal marks.

1. a) Solve $x \cdot \frac{dy}{dx} - 2y = x^2$

   b) Solve $\frac{d^2y}{dx^2} + 5\frac{dy}{dx} + 6y = 0$

2. Solve the differential equation $\frac{dy}{dx} = \frac{1+x^2}{1+y^2}$

3. Solve the differential equation $(D^2 + 4)y = \cos 2x$.

   i) $\frac{s+3}{s^2+8s+5}$ ii) $\frac{1}{s^2+25}$

4. Using convolution theorem, evaluate $L^{-1}\left\{\frac{1}{(s-1)(s-2)}\right\}$.

5. The probability of A for passing a test is 1/3, the probability of B for failing in the test is 5/6. What is the probability of either A or B for passing the test.

6. Find Karl Pearson's coefficient of correlation:

x	1	2	3	4	5
y	5	4	3	2	6

7. Find the student's '*t*' for following variable values in a sample of eight –4, –2, –2, 0, 2, 2, 3, 3 taking the mean of the universe to be zero.

   OR

   Form a differential equation by eliminating constants c_1 and c_2 from the equation $y = c_1e^x + c_2e^{-x}$

8. Find standard deviation for the series :
   48, 43, 65, 57, 31, 60, 37, 48, 59, 78

   OR

   The marks obtained by nine students in a paper of statistics are as follows
   52, 75, 40, 70, 43, 40, 65, 35, 48.
   Calculate the mean.

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