Code No: 6142/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy I-Year (Non-CBCS) (Backlog) Examination, January 2020

Subject : Mathematics

Time: 3 Hrs   Max Marks: 70

Note: Answer all questions. All questions carry equal marks

1. a) If X= 1+log a^{bc}, y = 1+ log b^{ca} and Z = 1+log c^{ab} prove that xyz = xy + yz + zx   7
   b) If A+B+C = 180, Prove that Sin 2A+ Sin2B + Sin 2C = 4 Sin A Sin B Sin C   7

   OR

   c) If tan A = $\dfrac{1}{2}$ and tan B = $\dfrac{1}{3}$ What is the Value of A+B   7

   d) Prove that 7 log $\dfrac{16}{15}$ + 5 log $\dfrac{25}{24}$ + 3 log $\dfrac{81}{80}$ = log 2   7

2. a) Find the derivative of Sin x using first principle   7

   b) Prove that $\displaystyle\lim_{x\to 3} \dfrac{x^3 - 8x^2 + 45}{2x^2 - 3x - 9} = -\dfrac{7}{3}$ 7

   OR

   c) Show that $\displaystyle\lim_{x\to 4} \dfrac{\sqrt{x} - 2}{x - 4} = \dfrac{1}{4}$ 7

   d) Find the derivative of y = e^x+ (log x) sin x   7

3. a) Evalvate $\int \dfrac{1}{4 + 5\sin x}\, dx$ 14

   OR

   b) Evaluate $\int \dfrac{2x + 6}{x^2 + 3x - 6}\, dx$ 14

4. a) Show that $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$ 14

   b) Solve the equations 3x + 4y + 5z = 18 2x - y - 8z = 13 and 5x - 2y + 7z = 20 by matrix inversion method   14

   OR

5. a) i) Find the equations of the Circle passing thrgh the points   (1, 2), (3,-4), and (5,-6)   7
      ii) Find the equation of the line having intercepts   a and b on the aves such that
         a + b = 3 and ab = 1   7

   OR

   b) Show that the points are co cyclic (1,-6), (5,2) (7,0) and (-1, 4)   14

****