Code No. 4035

FACULTY

B. Pharmacy I Year (Suppl.) Examination, November 2016

Subject : Mathematics

Time : 3 Hrs **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1 (a) Find x from the equation $a^x \cdot c^{2x} = b^{3x+1}$.

(b) If $\sin^{-} = \frac{3}{5}$ and θ is acute, Find the value of

$2\tan\theta + 3\sec\theta + 4\sec\theta.\operatorname{cosec}\theta = \frac{163}{12}$

OR

(c) Find the value of $\log_8 128$.

(d) If $\cot^{-} = \frac{5}{2}$ and θ is acute show that

$$\frac{5\cos^{-} + \sin^{-}}{5\cos^{-} \square 2\sin^{-}} = \frac{29}{21}$$

2 (a) Use first principles to find the sin x derivative.

(b) Find the maxima and minima of the function

$f(x)=3x^3 \quad 9x^2 \quad 27x + 30$

OR

(c) If $u = \tan^{1}\left(\frac{x^3 + y^3}{x \square y}\right)$, $x \neq y$ show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \sin 2u$

(d) If $z = 3x^2 \quad 2xy + 7y^2$. Find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$.

3 (a) Find $\int \frac{dx}{1+\cot x}$

(b) Evaluate $\int \cos^3 x \sin^4 x \, dx$

OR

(c) Evaluate $\int \frac{\sin 2x}{1+\sin^4 x} dx$

(d) Find the area between the cubic $y = x^3$ and parabola of $y = 4x^2$

..2

4 (a) Find the values of the determinant $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ b+c & c+a & a+b \end{vmatrix}$

(b) Solve the system of equations x + y + z = 1, 2x + 2y + 3z =6, x+4y+9z =3, by matrix “Inversion” method.

OR

(c) Find the value of x if $\begin{vmatrix} 1 & \square 2 & x+3 \\ 1 & x \square 2 & 3 \\ x+1 & \square 2 & 3 \end{vmatrix} = 0$

(d) If $\begin{vmatrix} \cos\sim & \sin\infty \\ \square\sin\sim & \cos\infty \end{vmatrix}$ show that A. A^1 = A^1.A=I.

5 (a) Write abt Linear and Non Linear raphs.

OR

(b) Find the equation of circle passin thrh the points (1, 1) (2, 1), (3, 2).

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