Code No: NR-101-BP

B. Pharmacy I Year Supplementary Examinations, June 2009
REMEDIAL MATHEMATICS

Time : 3hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

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1. a) Which term is independent of x in the expansion of $\left(2x + \dfrac{1}{3x^2}\right)^9$.

   b) Resolve $\dfrac{x^2+1}{(x^2+4)(x-2)}$ into partial fractions. [8+8]

2. a) Find the values of $\sin 105^0$, $\cos 105^0$ and $\tan 105^0$ from the functions of 45^0 and 60^0.
   b) Find the values of $\sin 15^0$, $\cos 15^0$ and $\tan 15^0$ from the functions of 45^0 and 30^0. [8+8]

3. a) Find the acute angle between the straight lines 3x-5y+7, 2x-y+4=0.
   b) Find the value of p, if the following lines are concurrent
      i) 3x+3y=5, 2x+3y=4, px+4y=6. [8+8]

4. a) Find $\dfrac{dy}{dx}$ if $2x^2+3xy+4y^2+3x=0$.

   b) Find $\dfrac{dy}{dx}$ if $y^2-2xy+3y-2x=0$. [8+8]

5. a) Differentiate $\dfrac{x^{1/2}(5-2x)^{2/3}}{(4-3x)^{3/4}(7-4x)^{4/5}}$.

   b) If $f = \log(x^2+y^2)$, Show that $\dfrac{\partial^2 f}{\partial x^2}+\dfrac{\partial^2 f}{\partial y^2}=0$. [8+8]

6. a) Find the area bounded by the curve $x^2 = 4y$ and $x = 4y-2$

   b) Evaluate $\displaystyle\int \dfrac{1}{\sqrt{x+a}+\sqrt{x+b}}dx$. [8+8]

7. a) Eliminate the Arbitrary constants from the differential equation
      y = a Cos (nx+b).
   b) Solve $(e^x+1)y\,dy+(y+1)dx=0$. [8+8]

8. a) Find the laplace transform of $\sin^4 t$.
   b) Find laplace transform of Sin2t Sin4t. [8+8]