Code: 15R00101

R15

B.Pharm I Year I Semester (R15) Supplementary Examinations May/June 2018
REMEDIAL MATHEMATICS

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
- (a)   Find the 10th term of geometric progression 5, 5^2, 5^3, ……….
- (b)   Resolve $\frac{5x+1}{(x+2)(x-1)}$ into partial fractions.
- (c)   Find the value of sin 20° cos 40° + cos 20° sin 40°.
- (d)   Find the value of $cos^4\theta - sin^4\theta$
- (e)   Find area of triangle formed by the points (1, 2) (3, -4) and (-2, 0).
- (f)   Find the value of x if the slope of the line joining (2,5) (x,3) is 2.
- (g)   If u = x^3-y^2 – y sinx, then find $\frac{\partial u}{\partial x}, \frac{\partial u}{\partial y}$.
- (h)   Evaluate $\int e^{4x+7} dx$.
- (i)   Form the differential equation of y = cx – 2 c^2, where c is a parameter.
- (j)   Find the Laplace transform of (sin t – cos t)^2.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   (a)   The 6th term of an A.P is 12 and 8th term is 22 then find 3rd term.
     (b)   Find the sum of n terms of sequence 7, 77, 777 ……..
OR
3   (a)   Prove that $7log\frac{16}{15} + 5log\frac{25}{24} + 3log\frac{81}{80} = log2$.
     (b)   Resolve $\frac{x+4}{(x^2-4)(x+1)}$ into partial fractions.

UNIT – II

4   (a)   If tan 20° = λ, prove that $\frac{\tan 160° - \tan 110°}{1 + \tan 160°.\tan 110°} = \frac{1-\lambda^2}{2\lambda}$.
     (b)   Prove that tan 70° – tan 20° = 2 tan 40° + 4 than 10°.
OR
5   (a)   Show that $\frac{1}{\sin 10°} - \frac{\sqrt{3}}{\cos 10°} = 4$.
     (b)   Prove that 4 sin20^o sin 40° sin 60° sin 80° = 3/4

UNIT – III

6   (a)   Find the value of t if the points (t, 2t) (2t, 6t) and (3, 8) are collinear.
     (b)   Slow that the points (-3, 1) (-6, -7) (3, -9) and (6, -1) taken in order form a parallelogram.
OR
7   (a)   Find the acute angle between two lines 3x+5y = 7, 2x-y = -4.
     (b)   Find the equation of line having intercepts a, b on the axes such that a+b = 5, ab = 6.

UNIT – IV

8   (a)   Find the derivative of $\sqrt{cos\sqrt{x}}$ with respect to x.
     (b)   Find all the points of maxima and minima of the function (x-1)(x+2)^2.
OR
9   (a)   Evaluate $\int \frac{cos\sqrt{x}}{\sqrt{x}} dx$
     (b)   Evaluate $\int_0^3 \frac{1+x}{1-x} dx$

UNIT – V

10   A body is originally at 80° C cools down to 60°C in 20 minutes. The temperature of air being 40°C.
         What will be the temperature of the body after 40 minutes?
OR
11   (a)   Find $L\{e^{2t} + 4t^3 - 2\sin t + 3\cos t\}$.
     (b)   Find L{cosh at.sin bt}.   **www.FirstRanker.com**
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