AMOOR- II 2004 Course) : WINTER - 2016

Subject : Numerical Methods

Day : Saturday
Date : 17/12/2016

S.D.E. 33268

Time : 02.00 PM TO 05.00 PM
Max Marks : 80 Total Pages : 2

N.B.:

1) Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section – II.
2) Answers to both the sections should be written in the **SAME** answer book.
3) Use of simple calculators and logarithmic table is **ALLOWED**.
4) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Solve the following system of linear equations using Gauss Seidal Method: **[10]**

$5x + 2y + z = 12$

$x + 4y + 2z = 15$

$x + 2y + 5z = 20$

Q.2 Solve the following system of equations by the Gauss Elimination Method. **[10]**

$2x + y + z = 10$

$3x + 2y + 3z = 18$

$x + 4y + 9z = 16$

Q.3 The table gives the distance in miles of the visible horizon for the given heights in feet above the earth's surface: **[10]**

X (height)	100	150	200	250	300	350	400
Y(distance)	10.62	13.02	15.02	16.80	18.40	19.80	21.25

Use Newton's forward interpolation formula to find the value of y when x = 218.

Q.4 Fit a straight line of the form $y = a + bx$ to the following data by method of least squares. **[10]**

X	4	5	7	10	11	13
Y	13	15	14	9	19	21

Estimate y when x = 6.

Q.5 Convert the following: **[10]**

a) $2AF_{16} = ?_{10}$

b) $1100110101_2 = ?_8$

Q.6 Explain the following: **[10]**

a) Error propagation

b) Accuracy and precision

P.T.O.