Daffodil International University

Department of CSE

Faculty of Science & Information Technology

Mid Term Examination, Semester: Spring 2017

Course Code: CSE- 234 **Course Title: Numerical Methods**

Section: All **Course Teacher: All**

Time: 01.30 hours **Full Marks: 25**

Answer any Five Questions from the following Six Questions

1.

a) If exact value is **"H"** and absolute error is **"Q"** then what is the relative error? **01**

b) If $X = 6.387$, where " X " indicate exact value then find the value of E_p . **01**

c) Evaluate the sum $S = \sqrt{56} + \sqrt{65}$ to 5 significant digits and also find E_A , E_R . **03**

2.

Using appropriate method to find the real root of $4\sin x - e^x = 0$ where $\in = .00001$. **05**

3.

What do you mean by interpolation? Derive Lagrange's interpolation formula for degree three. **01+04**

4.

From the following table of values, find p for which $sinhp = 4$ **05**

p	2.2	2.4	2.6
$sinhp$	12.246	14.965	18.285

5.

Using the following table find $\log_{10}(302)$ **05**

x	301	304	305	307
$f(x)$	2.4771	2.4829	2.4843	2.4871

6.

Find the value of $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x = 1$ from the following table : **05**

x	0	1	2	3	4	5
y	0	0.25	0	2.25	16	56.25