Daffodil International University

Department of CSE
Faculty of Science & Information Technology
Mid –Term Examination, Fall' 2019

Course Code: MAT-111 Course Title: Basic Mathematics
Sections: ALL Course Teacher: ALL

Time: 1.5 Hours Total Marks: 25

Answer any five from the following six questions.

Q.1	(a) Find the all prime factors of 1624. (b) Find the values of ω from $r(\cos\omega + i\sin\omega) = 1 + i\sqrt{3}$.	2.5+2.5
Q.2	(a) What is meant by Surd? (b) Find the LCM & HCF of 5.4, 9.4 and 6.4.	1+ 4
Q.3	(a) Find the fourth root of 810000 by using tree diagram. (b) Find the value of a & b if $a + b\sqrt{6} = \frac{7\sqrt{3}+5\sqrt{2}}{\sqrt{48}-\sqrt{18}}$.	2+3
Q.4	(a) Show that $\sqrt{x} - \frac{1}{\sqrt{x}} = 8$ if $x = 5 + 2\sqrt{6}$. (b) Find the value of x if $4^{x-y} = 64$ & $4^{x+y} = 1024$.	2.5+2.5
Q.5	(a) Prove that $\log_2(x^3 y) = 3p + 2q$ where $x = 2^p$ and $x = 4^q$. (b) Solve $\frac{a^x - 1}{a^{-x} - 1} = -a$	3+2
Q.6	(a) Find the values of A, B , C & D for $\frac{1}{(x-1)^2(x^2-2)} = \frac{A}{(x-1)} + \frac{B}{(x-1)^2} + \frac{Cx+D}{(x^2-2)}$ (b) Solve the equation $x^3 - 19x^2 + 114x - 216 = 0$	3+2