

ANJUMAN-I-ISLAM'S  
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL  
School of Engineering & Technology

Subject: AM III

Marks: 20

Class: SE

Unit Test 1

Date: /09/16

Duration: 1Hr

Branch: CO

N. B. 1. Attempt any four questions of the following.

2. All questions carry equal marks

1. Find the constants  $a, b, c, d, e$  if

$f(z) = (ax^3 + bxy^2 + 3x^2 + cy^2 + x) + i(dx^2y - 2y^3 + exy + y)$  is analytic.

2. Find an analytic function whose imaginary part is  $\sinh x \sin y$ .

3. Find a bilinear transformation which maps the points  $2, 1, 0$  onto  $1, 0, i$ .

4. Find  $L\{\sin\sqrt{t}\}$ .

5. Find  $L\{t \sin 2t \cos ht\}$

6. Evaluate  $\int_0^{\infty} \frac{e^{-t} \sin t}{t} dt$ .

\*\*\*\* All the Best \*\*\*\*

ANJUMAN-I-ISLAM'S  
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL 2016-17  
School of Engineering & Technology

Subject: DIS

Date: 01/09/2016

Marks: 20

Duration: 1 Hr/s

Class: SE (Sem III)

Branch: COMPUTER

Instructions: 1) All the Questions are compulsory.

2) Assume suitable data wherever necessary.

Q. 1) Attempt any 5 : (10)

- a) Define i) Reflexive Closure ii) Symmetric Closure iii) Transitive Closure  
b) Let  $A = \{1, 2, 3, 4\}$  and  $R = \{(1, 2), (1, 3), (2, 2), (2, 3), (2, 4), (3, 2), (4, 3)\}$   
 $S = \{(1, 3), (2, 1), (2, 4), (3, 1), (3, 2), (4, 2)\}$   
Find (i)  $\bar{R}$  (ii)  $R \cup S$  (iii)  $\bar{R} \cap S$  (iv)  $R^{-1}$   
c) Find Domain, Range, Matrix and Digraph of the following relation:  
 $A = \{1, 2, 3, 4, 5\}$  and "aRb if and only if  $a=b$ ".  
d) Let  $A = \{1, 2, 3, 4\}$  and  $R = \{(1, 2), (1, 3), (2, 3), (3, 4)\}$ .  
State the nature of the relation. Give its Matrix and Digraph.  
e) Let  $A = \{1, 2, 3, 4\}$  &  $R = \{(1, 1), (2, 2), (3, 3), (4, 4), (2, 1), (1, 2), (2, 3), (3, 2), (3, 1), (1, 3)\}$   
Prove that R is an equivalence relation. Also, find its Matrix and draw its digraph  
f)  $A = \{1, 2, 3\}$ , and  $R = \{(1, 1), (1, 2), (2, 1), (3, 1), (1, 3)\}$ .  
Find the reflexive closure of R.

Q. 2) A)  $A = \{1, 2, 3, 4\}$  and  $R = \{(1, 1), (1, 2), (1, 4), (2, 4), (3, 1), (3, 2), (4, 2), (4, 3), (4, 4)\}$  (5)  
Find the transitive closure by using Warshall's Algorithm.

OR

B) Using Laws Of Logic, prove that (5)

$[(p \vee q) \wedge \sim(\sim p \wedge (\sim q \vee \sim r))] \vee (\sim p \wedge \sim q) \vee (\sim p \wedge \sim r)$  is a Tautology.

Q. 3) A) Prove by Mathematical Induction, (5)  
 $x^n - y^n$  is divisible by  $x - y$

OR

B) In a class, 42% students passed in Maths, 45% passed in Physics, 41% students passed in Chemistry, 16% passed in Maths and Physics, 19% passed in Physics and Chemistry, 18% passed in Chemistry and Maths. Find the number of students who passed in all the three subjects if there were 260 students in the class and 15% students failed in all the subjects. (5)



Symbol of Secularism  
& National Integration

**ANJUMAN-I-ISLAM'S  
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**Subject: DS  
Date: .../.../2016  
Class : SE CO  
Semester: III**

**Unit-Test: 1**

**Marks: 20  
Duration: 1 hr  
Branch : CO**

- Note:1) All questions all compulsory.  
2)Use C language to write any function.  
3)SLL- Singly Linked List, DLL- Doubly Linked List.**

Q 1. Attempt any five out of six. (each 2 marks)

- (i) Array is .....(linear/nonlinear) data structure?
- (ii) Define Data structure.
- (iii) Write at least two comparisons between array and linked list.
- (iv) Explain Dynamic memory allocation.
- (v) Explain the syntax of malloc() function with example.
- (vi) Define linear and non-linear data structure with example.

Q 2. (a) Write a function to create a SLL by inserting node at the beginning and also write a function to display it. 5

Or

(b) Write a function to insert node after specific location in SSL. 5

Q 3. (a) Explain SLL and DLL with pictorial representation. What is the advantage of DLL over SLL? 5

Or

(b) Write two-different functions to delete node from beginning and from the end of SLL. 5



**ANJUMAN-I-ISLAM'S  
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**Subject: OOPM**

**Date: 2/9/2016**

**Marks: 20**

**Duration: 1 Hr**

**Class: SE**

**Branch: Computer Eng.**

**Instructions:** All Questions are compulsory.

**Q.1 Answer any 5 questions out of 6 ( Each carry 2 marks)**

**(10M)**

a) What will be the output of the following code

```
class Ques
{
    public static void main(String arg[])
    {
        int i=3,j=5,k;
        k=i+++j++j-i--;
        System.out.println("i="+i+"j="+j+"k="+k);
    }
}
```

- b) Explain how java is platform Independent?
- c) True or False with justification: When Java program is compiled , Source code gets translated into machine code.
- d) What is the significance of static keyword?
- e) List out the Bitwise operator available in Java.
- f) Explain the working of System.arraycopy().

**Q.2 Answer any one Question.**

**(5m)**

- a) What is Vector? Explain any five methods of vector.
- b) Explain method overloading with example.

**Q.3 Solve any one Question.**

**(5M)**

- a) WAP to find largest second largest and smallest number in an array
- b) WAP to find number of digits, alphabets and special symbols in an array



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**ANJUMAN-I-ISLAM'S  
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Subject: Digital Logic Design and Analysis

Marks: 20

Duration: 1 Hr

TEST -I

Class : SE COMP

Q 1) Attempt any 5 questions out of six.

- a) Convert  $(1473.45)_{10}$  to hexadecimal number system. (2)
- b) Perform  $(22)_{10} - (31)_{10}$  using 2s complement method. (2)
- c) Perform  $(DADA)_H + (BABA)_H$ . (2)
- d) Perform  $(57)_{10} + (26)_{10}$  in BCD. (2)
- e) Convert  $(11011)_2$  to gray code (2)
- f) State Boolean algebra laws used in k-map simplification. (2)

Q 2) Write Hamming code for 1010. Prove that hamming code is error detecting and correcting code. (5)

OR

Simplify  $f(A,B,C,D) = \sum m(4,5,8,9,11,12,13,15)$  using Quine McCluskey method. (5)

Q 3) Simplify following expression and draw circuit for the final expression.

$$Y = AB(\overline{CD}) + \overline{BCD} + (\overline{A+C})(B+D) \quad (5)$$

OR

Simplify following function using k-map and implement using NAND gates only. (5)

$$f(A,B,C,D) = \sum m(4,5,6,7,8,10,12) + \sum d(2,9,11)$$



ANJUMAN-I-ISLAM'S

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School of Engineering & Technology

Subject: ECCF

Date: /09/2016

Marks: 20

Duration: 1 Hr/s

Class: SECO

Branch: Comp. Engg.

Q-1) Solve any five.

- Define – Pinch-off voltage , Cut-off voltage. 2
- Sketch transfer characteristics of n-channel JFET, mark  $I_{DSS}$  &  $V_{GS(OFF)}$  on it. 2
- Explain Transconductance  $g_m$ , Drain-source saturation current  $I_{DSS}$ . 2
- Sketch drain characteristics of n-channel JFET , mark important voltages, currents, operating regions on it. 2
- Draw circuit diagram, input & output waveform of inverting configuration of OP-AMP. 2
- Explain the term drain resistance  $r_D$  also write it's typical value. 2

Q-2) Attempt any one.

- Draw circuit diagram, input & output waveform also derive equation of gain for non-inverting configuration of OP-AMP. 5
- For circuit diag- 2b , Find  $I_D$ ,  $V_{GS}$ ,  $V_{DS}$ . 5

Q-3) Attempt any one.

- Explain positive feedback concept, Barkhausen criteria for oscillator. Also draw Colpitt's oscillator. 5
- Explain following parameters of OP-AMP- 5
  - CMRR
  - PSRR
  - Slew rate
  - i/p offset voltage  $V_{io}$
  - i/p Bias current  $I_B$ .

