



Symbol of Secularism
& National Integration

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

Subject: Data Structures (DS)

Marks: 20

Test: I (05/09/13)

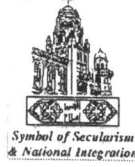
Duration: 1 Hrs

Class: SECO (sem III) Unit test I

Branch: CO (2013-14)

Instructions: Q No. 1 is compulsory and attempt any one out of remaining two.

- 1)
 - a. Define Data Structure and explain about linear and non linear data structures. 5
 - b. Differentiate between arrays and linked list. 5
- 2) Write functions for the following :
 - a. To insert a node at the end of singly linked list. 5
 - b. To display the contents of doubly linked list. 5
- 3) Define stack and implement it using arrays. 10



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Subject: DLDA

Marks: 20

Class: SE - CO (Sem III) Unit Test I

Date: Sep 13

Duration: 1 Hr/s

Branch: Computer (2013-14)

- Q1: Convert $(2AC5.D)_H$ to Decimal, Octal and Binary? (3)
- Q2: Convert $(1161.3)_D$ to Binary, Octal and Hexadecimal? (3)
- Q3: Convert $(1574)_8$ to Binary, Hexadecimal and Octal? (3)
- Q4: Solve $(756)_8 - (176)_8$ using 8's Complement? (2)
- Q5: Using 2's Complement method perform $(57)_D - (28)_D$ (3)
- Q6: Using 16's Complement method perform $(B73)_H - (A91)_H$ (2)
- Q7: Convert $(101011)_2$ to Gray Code (1)
- Q8: Convert $(110011)_{Gray}$ to Binary (1)
- Q9: Generate even bit Hamming Code for following binary data $(1101)_2$ (2)



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Subject: Applied Maths-III

Date: 05.09.2013

Class: S.E

Semester: III (Sem III) Unit Test I

Marks: 20

Duration: 1 Hr

Branch: CO (2013-14)

Test: First

N.B. 1) Attempt any two questions of the following.

2) All questions carry equal marks.

Q 1 - a) Find $L^{-1} \left\{ \frac{(s+2)^2}{(s^2+4s+8)^2} \right\}$ using Convolution theorem.

b) Find the Laplace Transform of

$$e^{4t} t \int_0^t e^{-4u} \sin 3u \, du.$$

Q 2 - a) Solve $\frac{d^2y}{dt^2} + 4y = f(t)$ with initial conditions $y(0) = 0, y'(0) = 1$

$$\text{and } f(t) = \begin{cases} 1 & 0 < t < 1 \\ 0 & t > 1 \end{cases}$$

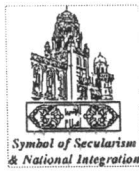
b) Show that $\int_0^\infty e^{-t} \frac{\sin^2 t}{t} \, dt = \frac{1}{4} \log 5.$

Q 3 - a) Find i) $L\{(1 + 2t - 3t^2 + 4t^3)H(t - 2)\}$

ii) $L^{-1} \left\{ \frac{e^{4-3s}}{(s+4)^{5/2}} \right\}$

b) Find $L^{-1} \left\{ \log \left(\frac{s^2+a^2}{s^2+b^2} \right) \right\}.$

----- All the Best -----



ANJUMAN-I-ISLAM'S
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School of Engineering & Technology

Subject: ECF

Date: 07/09/13

Class: S.E (Sem III) Unit Test I

Marks: 20

Branch: Computer (2013-14)

Instructions:

Answer Any Six

2x6=12

1. What is the Need of FET Biasing? Name the Type of Biasing.
2. Explain FET as Switch.
3. FET is Unipolar or Bipolar? Draw the symbol of FET and Applications of FET
4. FET is voltage controlled or current controlled? Explain for the Answer
5. Draw and Explain Small signal FET Model
6. Explain an Op-Amp? Draw Circuit Symbol of Op-Amp.
7. What is Barkhausen Criterion

Answer Any Two

4x2=8

- 1 Explain the Working of Common Source Amplifier.
2. Draw and Explain the working of Hartley Oscillator.
- 3 Explain the Op-Amp parameters? Calculate CMRR for differential voltage gain is 30000
Common mode Signal gain is 2000 (calculate in dB)



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

Subject: OOPS

Marks: 20

Class: SE (III Sem)

Unit Test I

Date: Sept. 2013

Duration: 1 Hr/s

Branch: Computer (2013-14)

Instructions:

1. First Question is compulsory
2. Second Question answer any 4 out of 5

I. Write an example Java Program demonstrating the use of Class, Objects, Inheritance and Polymorphism. - **5 Marks**

II. Answer any three [**15 Marks (5 marks each)**]

- a. Explain Class and Objects in Object oriented program design.
- b. Explain Inheritance and Polymorphism in Object oriented program design.
- c. Write a program to find perimeter of Polygon shapes using Java Classes.
- d. Write a program to find distance between two geometric points using Java classes.
- e. List and briefly explain the features of Object Oriented Programming.



ANJUMAN-I-ISLAM'S
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Subject: Discrete Structure

Date: 07.09.2013

Class: S.E - CO (Sem IV)

UNIT TEST (I)

Marks: 20

Duration: 1 hr

(2013-14)

N.B.1) Question no.1 is compulsory.

2) Attempt any one from remaining two.

Q. 1] a) In a survey of 260 college students, the following data were obtained (6)

64 had taken a Mathematics course.

94 had taken a computer science course.

58 had taken a business course.

28 had taken both mathematics and business course.

26 had taken both mathematics and computer science course.

22 had taken both computer science and business course.

14 had taken all three types of course.

- (i) How many students were surveyed who had taken none of the three types of courses?
- (ii) Of the students surveyed, how many had taken only a computer science course?

b) Write English sentences corresponding to following: (4)

(i) $\forall x \exists y R(x, y)$

(ii) $\exists x \forall y R(x, y)$

(iii) $\forall x (\neg Q(x))$

(iv) $\exists y (\neg P(y))$

where, $P(x)$: x is even

$Q(x)$: x is prime no.

$R(x, y)$: $x + y$ is even

Q. 2] a) Show that $1^2 + 3^2 + 5^2 + \dots + (2n-1)^2 = n(2n-1)(2n+1)/3$ (6)

b) Given $A = \{1, 2, 3, 4\}$ and $B = \{x, y, z\}$. Let R be the following relation from A to B : (4)

$R = \{(1, y), (1, z), (3, y), (4, x), (4, z)\}$

- (i) Determine the matrix of the relation.
- (ii) Draw the arrow diagram of R

- (iii) Find the inverse relation R^{-1} of R .
- (iv) Determine the domain and range of R .

Q.3] a) Determine whether the relation is reflexive, irreflexive, symmetric, asymmetric, antisymmetric or transitive: (with justification) (6)

$$R = \{(1, 3), (1, 1), (3, 1), (1, 2), (3, 3), (4, 4)\}$$

b) Explain the following terms with suitable example: (4)

(i) Symmetric difference

(ii) Cartesian product.

-----GOOD LUCK-----