



23/10/13 Set-04  
9 to 10 AM.

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

Subject: ECF

Date: Oct-13

Class: S.E (III)

Marks: 20

Branch: Computer

Test-II

Instructions:

5x4=20

(2013-14)

Note: Q1 is Compulsor and attempt any 4 from Remaining

1. In an AM Modulator, 500 kHz carrier of amplitude 20V is modulated by 10 kHz modulating signal which causes a change in the output wave of 7.5V. Determine

- USB and LSB frequencies
- Modulation Index
- peak amplitude of USB and LSB frequencies
- maximum and minimum amplitudes of envelope

2. Draw the Block Diagram of AM transmitter (both level only diagram)

3. Explain the Phase shift method to generate upper sideband.

4. Explain FM generation by Armstrong method with neat Block diagram

5. Draw the block diagram of Superheterodyne Receiver

6. Explain Foster-Seeley Discriminator in details



ANJUMAN-I-ISLAM'S

(2013-14)

KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Subject: OOPM

Duration: 1hr

09.13

Class : Second year (III)

Branch : Computer Engg

Test: II

Marks: 20

Q1. Attempt **any 5** of the following

(Each question carry **2 Marks**)

- Explain the **garbage collection** with example?
- Explain the term **final** class with example?
- Explain the **finally** keyword with example?
- Explain the **static** keyword with example?
- Explain **Association** and **aggregation** with example?
- Write a program to count the number of upper case, lower case and digit in the given string?

Q2. Attempt **any 1** of the following:

(5 Marks)

- Explain the life cycle of Multithreading? & write a multithreading program to print `*/**/**/**/`
- Explain the life cycle of Applet & write a applet program to draw a "Olympic" symbol

Q3. Attempt **any 1** of the following:

(5 Marks)

- Explain difference between Abstract class and Interface class & write a program which contains Interface area with calculate method & class circle, rectangle & triangle. Calculate & display the area of each class
- Draw the class diagram and the sequence diagram for the library management system. Consider only 1 scenario for the sequence diagram.



Symbol of Secularism  
& National Integration

(2013-14)

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

Subject: Discrete Structures (DIS)

Date: 23.10.2013

Class: SE - CO (III)

UNIT TEST (II)

Marks: 20

Duration: 1 hr

Sem : III

Note: - Attempt all questions.

Q. 1] Attempt any five out of six.

(2 marks each)

Define with example:-

(i) Injective function

(ii) Bijective function

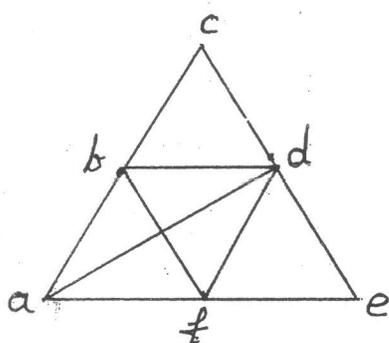
Find Generating Function of following sequence:-

(iii) 1, 0, -1, 0, 1, 0, -1, 0, ....

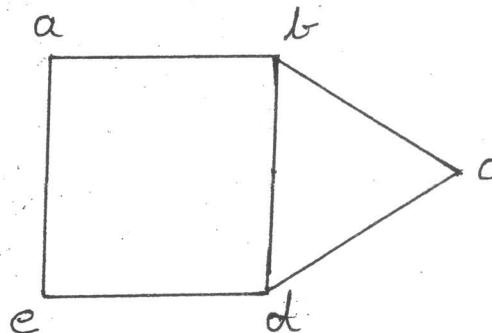
(iv) 1, 1, 1, 1, 1, .....

Determine whether the following graph has a Hamiltonian circuit or Eulerian circuit. If it does find such circuit.

(v)



(vi)



Q.2]

(5 marks each)

(a) Let  $A = \{1, 2, 3, 4\}$  and  $R = \{(1, 2), (2, 1), (2, 2), (4, 3), (3, 1)\}$ . Find the transitive closure of relation R by Warshall's algorithm.

OR

(b) Let Z be set of integers. Define R on Z iff 6 divides (a - b). Show that R is Equivalence relation. Find  $Z/R$ .

Q.3]

(5 marks each)

(a) Let  $f: R \rightarrow R$   $f(x) = x^3$ ,  $g: R \rightarrow R$   $g(x) = 4x^2 + 1$ ,  $h: R \rightarrow R$   $h(x) = 7x - 2$ .

Find (i)  $go(hog)$  (ii)  $go(hof)$

OR

(b) Find the complement of each element in  $D_{30}$ .



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Class: S.E (III)

Marks: 20

Branch: Computer

Test-II

Instructions:

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School of Engineering & Technology

Subject: OOPM

Class : Second year (III)

Test: II

Duration: 1hr

Branch : Computer Engg

Marks: 20

08-13

(2013-14)

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(5 Marks)

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KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

(2013-14)

Subject: Applied Maths-III  
Date: 21.10.2013  
Class: S.E  
Semester: III

Marks: 20  
Duration: 1 Hr  
Branch: CO  
Test: Second

Test II

N.B. 1) Attempt any **four** Questions.

2) All Questions carry equal marks.

1. Find an analytic function whose real part is  $\frac{\sin 2x}{\cosh 2y + \cos 2x}$
2. Find the Mobius Transformation which maps the points  $1, i, -1$  onto the points  $i, 0, -i$  hence find the fixed points of the transformation.
3. Find the Fourier series of  $f(x)$  in the interval  $(0, 2\pi)$ .

$$f(x) = \begin{cases} x & 0 < x \leq \pi \\ 2\pi - x & \pi \leq x < 2\pi \end{cases}$$

Hence deduce that  $\frac{\pi^2}{8} = \frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + \dots$

4. Show that the set of functions  $\{\sin x, \sin 3x, \sin 5x, \dots\}$  is orthogonal over  $(0, \pi/2)$ .  
Hence construct an orthonormal set of functions.
5. Obtain the complex form of Fourier series for  $f(x) = \cosh ax$  in  $(-l, l)$ .
6. Obtain the half range cosine series for  $f(x) = (x-1)^2$  in  $0 < x < 1$ .

---- All the best ----



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

(2013-14)

Subject: DLDA  
Date: 22/10/2013  
Class : SE(III)

Marks: 20  
Duration: 1 hour  
Branch : Computer

Test - II

Q1. Attempt any 2 of the following

(Each question carry 4 Marks)

- Draw the Circuit to realize multiple output function using Binary Decoder for  $f(A,B,C) = \sum m(1,2,3,7)$
- Draw and Explain SR Flip Flop with the help of a truth table.
- Draw and Explain JK Flip Flop with the help of a truth table.
- Implement the following using one 8:1 MUX and a few gate  $f(A,B,C,D) = \sum m(0,3,5,7,13,15)$ .

Q2. Attempt any 1 of the following:

(6 Marks)

- Using k-Map minimize the following logic function and realize using gates for  $f(A,B,C,D) = \sum m(1,3,5,8,9,11,15) + d(2,13)$ .
- Using Quine Mcluskey method determine the SOP form for  $f(A,B,C,D) = \sum m(4,5,8,9,11,12,13,15)$ . Also draw the equivalent circuit.

Q3. Attempt any 1 of the following:

(6 Marks)

- Draw Half Adder and Full Adder circuit with truth table?
- Draw Half and Full Subtractor circuit with truth table?