Set 1

2013-14
Comp.

AIKTC, School of Engineering & Technology

UNIT TEST 1 FEB 2014

SE- All Branches Sem IV (CBSGS) Applied Maths IV

Q.1 a) Prove that Eigen values of a Hermitian matrix are real numbers. (12)

b) $A = \begin{bmatrix} -1 & 2 & 3 \\ 0 & 3 & 5 \\ 0 & 0 & -2 \end{bmatrix}$ Find the Eigen values and Eigen vectors for $A^3 + 5A + 8I$.

c) $A = \begin{pmatrix} \pi & \pi/4 \\ 0 & \pi/2 \end{pmatrix}$ Find cos A

Q.2) Given $A = \begin{bmatrix} 2 & 1 & 1 \\ 2 & 3 & 2 \\ 3 & 3 & 4 \end{bmatrix}$ (8)

a) Find Eigen values and eigen vectors of A.

b) Is A Diagonable? Explain.

c) Is A derogatory ? Explain.

OR

Q.2) Given $A = \begin{bmatrix} 1 & -2 & 0 \\ 1 & 2 & 2 \\ 1 & 2 & 3 \end{bmatrix}$ (8)

a) Find Eigen values and Eigen vectors of A.

b) Is A Diagonable? Explain.

c) Is A Derogatory ? Explain.

Symbol of Secularism & National Integration

2013-14

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

Subject: TCS | **Test: Unit - Test 1**
Marks: 20 | **Duration: 1 Hr**
Class: Second Year (Comp) Sem IV | **Branch: SECOMP** Feb-14

1. Define the following:
   a. Alphabet
   b. String
   c. Language

2. What is finite Automata? Give the graphical notation in finite automata.

3. Explain different types of machines and state at least one application of each.

4. Differentiate between DFA and NFA

5. Design the DFA for the languages below:
   a. Strings ending with 11, $\Sigma = \{ 0,1 \}$.
   b. $L=\{ w \mid w$ starts with zero and has odd length or starts with one and has even length $\}$
   c. Strings containing substring *ab*, $\Sigma = \{ a,b \}$.
   d. Strings with even a's and b's.
   e. $L= \{ w : |w| \bmod 3 = 0$ on $\Sigma = \{ a,b \} \}$.

[10]

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2013-14

KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Subject: OOPM | Duration: 1hr | Feb. 14

Class : Second year Sem IV | Branch : Computer Engg

Test: Re-Unit Test – I | Marks: 20

Q1. Attempt **any 5** of the following (Each question carry **2 Marks**)

i. Explain the **garbage collection** with example?
ii. Explain the term **final** class with example?
iii. Explain the **finally** keyword with example?
iv. Explain the **static** keyword with example?
v. Explain **Association** and **aggregation** with example?
vi. 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**)

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

Q3. Attempt **any 1** of the following: (5 **Marks**)

i. 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
ii. Draw the class diagram and the sequence diagram for the library management system. Consider only 1 scenario for the sequence diagram.

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Subject : **Computer Graphics** Feb 2014 **Marks: 20**
Test : **I** **Duration: 1 Hr**
Class : **SE CO** Sem IV^th U.P. 1

Instructions: Q No. 1 is compulsory and attempt any three out of remaining four.

Q.1 What are the Graphics Input primitives (Logical and Physical) with suitable example.

Q.2 What are the different types of Graphics Display Devices.Also Explain any one Display Device in detail.

Q.3 List and Explain the Different Basic Primitives in OpenGL with a suitable example.

Q.4 Write any one Algorithm for Line Drawing.and plot the points A(2,2) and B(7,8).

Q.5 Write Any five Application of Computer Graphics.

2013-14

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Subject : COA — Feb 2014 — **Marks: 20**
Test : Unit Test 1 — Sem IV — **Duration: 1 Hr**
Class : SE COMPUTER

Instructions: a. Q No. 1 is compulsory
b. Attempt **any two** out of remaining three.

1. Answer the following: **[10 marks]**
   a) What is the difference between Computer architecture and Computer organization?
   b) What is Data representation and encoding? Explain it with examples.
   c) Convert $(-47)_{10}$ and $(-10)_{10}$ into 2's complement format (8 bit format).
   d) Convert $(-20)_{10}$ and $(-7)_{10}$ into 2's complement format and subtract(Using minimum number of bits).
   e) Booth algorithm is used for mulitplying
      i. Only positive operands.
      ii. Both positive and negative operands.
      iii. Only when the multiplier is positive.
      iv. None of the above.

2. Answer the following: **[5 marks]**
   a) Give the rules for the addition, subtraction, division and multiplication of IEEE 754 Single precision floating point numbers.
   b) Convert the following numbers into IEEE 754 Single precision binary format
      i. $(132.25)_{10}$
      ii. $(44.75)_{10}$

   And peform the their addition using floating arithematic operations only.

3. Draw the flowchart of Booth's algorithm and multiply $(-11)_{10}$ X $(-3)_{10}$.(Using Booth's algorithm only). **[5 marks]**

4. Draw the flowchart for non-restoring division and perform $(1100)_2 \div (11)_2$. **[5 marks]**

---All the Best

2013-14

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

Subject: DBMS
Date: Feb 2014
Class : 2nd year
Semester:Iv U.T. I

Marks: 30
Duration: 1hr
Branch : computer Eng
Test: I

I Compulsary question(5*1=5)

Q 1. Draw an E-R diagram for the company database.Be sure to indicate various attributes of each entity and relationship set,also specify the cardinality ratio, key and participation constraints for each relationship set.(5m)

II Attempt any three (5*3 =15).

Q2. a)What is Database and DBMS? (1m)
b)Write the Advantages of DBMS?(2m)
c)List the four significant differences between file processing system and DBMS?(2m)

Q3 a)Explain the three schema Architecture of a database?(3m)
b)What is Data independance? Explain Physical and Logical Data inependance?(2m)

Q4 Explain the Structure of a DBMS with a neat diagram?(5m)

Q5 a)Explain DDL and DML statements in SQL with examples?(3m)
b)Explain the different types of attributes.(2m)