Total No. of Questions : 12]

SEAT No. :

P1563

[Total No. of Pages : 2

[5061]-101
F.Y. M.C.A. (Engineering)
C & C++ PROGRAMMING
(2013 Course) (Semester - I) (310901)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) a) What is a procedural paradigm? State its Disadvantages. **[4]**

b) Enlist the steps to run a C program from command line. **[4]**

OR

Q2) a) List down the steps in executing and debugging C program. **[4]**

b) Explain 'stdio.h' header file in detail. **[4]**

Q3) a) Explain with example 'While Loop'. **[4]**

b) Write a program to store Book Information using Structures in C. **[4]**

OR

Q4) a) Explain the use of '*' and '&' in pointers. **[4]**

b) How Strings are stored and displayed in C. **[4]**

Q5) a) Write a short note on 'Macros'. Write a program to create a macro for finding cube of any number. **[5]**

b) What is the use of 'Call By Reference'? Explain with suitable example. **[4]**

OR

Q6) a) What is Modularity? How Modular programming is implemented and useful in C language? **[5]**

b) Explain any 2 standard Library function with example. **[4]**

P.T.O.

Q7) a) Enlist the difference between C & C++. **[4]**

b) What are classes and objects? Explain with example. **[4]**

OR

Q8) a) What are Constructors? Explain the different types of Constructors. **[4]**

b) Compare C in and C out of C++ with printf and scanf of C language. **[4]**

Q9) a) Explain the various access modifiers used for inheritance in C++ with example. **[4]**

b) Write a program to overload binary + to add two complex numbers. **[4]**

OR

Q10)a) What is function overriding? **[4]**

b) Explain static function in short. **[4]**

Q11)a) What is command line argument? Write a program to demonstrate the use of it. **[5]**

b) Explain the function seekp() and seekg(). **[4]**

OR

Q12)a) Explain the hierarchy of ostream and fstream classes in C++. **[5]**

b) Differentiate between text and binary files. **[4]**

Total No. of Questions : 12]

SEAT No. :

P1564

[Total No. of Pages : 2

[5061]-102
F.Y.M.C.A.(Engg.)
COMPUTER ORGANIZATION
(2013 Course)(Semester-II)(310902)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) Explain the theorems of Boolean algebra: **[9]**

a) Idempotent law

b) Absorption law

c) Involution law.

Give the proof by perfect induction method.

OR

Q2) Construct three basic gates using NAND gate **[9]**

Q3) Explain Counters and its types with example. **[8]**

OR

Q4) Explain design of Half Adder and Full Adder with truth table for each. **[8]**

Q5) a) Express the following function $F=A+\overline{B}.C$ in sum of minterms form. **[8]**

b) Express the following function $F=x.y+\overline{x}.z$ in sum of maxterms form.

OR

Q6) Write a short note on: **[8]**

a) DRAM b) SDRAM

c) RDRAM d) DDR

P.T.O

Q7) Explain the processor and memory architecture of a computer system. **[8]**

OR

Q8) a) Explain the types of processors: **[6]**

i) RISC

ii) CISC

iii) EPIC

b) How many bytes of Kilobytes, Megabytes and Gigabytes are? **[2]**

Q9) Explain Pentium processor registers. **[8]**

OR

Q10) Explain the architecture for 16-bit 8086. **[8]**

Q11) What are the types of parallel processor systems. Explain them in detail. **[9]**

OR

Q12) What is cluster? Explain cluster architecture in detail. **[9]**

Total No. of Questions : 12]

SEAT No. :

P1565

[Total No. of Pages : 2

[5061]-103
F.Y. M.C.A. (Engineering)
PRINCIPLES OF PROGRAMMING PRACTICES
(2013 Pattern) (Semester - I) (310903)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume Suitable data, if necessary.***

Q1) a) Write a short note on Object oriented Programming Language. **[4]**

b) What are the software development steps? **[4]**

OR

Q2) a) Compare Assembly Language and High Level Language. **[4]**

b) Write a short note on: **[4]**

i) Firmware

ii) Compiler

Q3) a) Define: **[4]**

i) Parameter

ii) Return Value

iii) Data Dictionary

iv) Global variable

b) Write a short note on Interactivity Chart. **[4]**

OR

Q4) a) Name three current problems in your life that might be solved through a heuristic approach. Explain why each of these problems is heuristic in nature. **[4]**

b) Differentiate between: **[4]**

i) Constant and Variable.

ii) Expression and Equation.

P.T.O.

Q5) a) What is meant by the coupling of a module? Explain with example different levels of coupling. **[5]**

b) Write a short note on modular programming. **[5]**

OR

Q6) a) What is module? Explain different types of modules and State the rules for designing modules. **[5]**

b) Explain the three logic structures and What is meant by coupling modules? **[5]**

Q7) a) Explain Efficiency of an algorithm. **[4]**

b) Write down Exchange of values of two variables with or without third variable. **[4]**

OR

Q8) a) Write down an algorithm of generation of Pascal triangle. **[4]**

b) List and Explain factors included in implementation of an algorithm with example. **[4]**

Q9) a) Explain three different ways of analysis and Which is best to use. **[4]**

b) Explain time complexity and calculate the same for bubble sort. **[4]**

OR

Q10)a) Explain how to estimate running time of an algorithm with one method. **[4]**

b) Explain space complexity and calculate the same for selection sort. **[4]**

Q11)a) Write a short note on Immediate changeover. **[4]**

b) Design an algorithm for mean and median of n-numbers. **[4]**

OR

Q12)a) Difference between testing and debugging. **[4]**

b) Design an algorithm for Binary Search. **[4]**

Total No. of Questions : 12]

SEAT No. :

P1566

[Total No. of Pages : 3

[5061]-104
F.Y.M.C.A.(Under Engg.)
DISCRETE MATHEMATICS
(2013 Course)(Semester-I)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of probability table, electronic pocket calculator is allowed.***
5) ***Assume suitable data if necessary.***

Q1) a) Prove by mathematical induction that $8^n - 3^n$ is a multiple of 5 for $n \geq 1$ **[5]**

b) An investigator interviewed 100 students to determine their preferences for the three. **[4]**

drinks-Milk(M), Coffee(C) and Tea(T). He reported the following: 10 students had all the

three drinks,20 had 'M' and 'C',30 had 'C' and 'T',25 had 'M' and 'T',12 had 'M' only, 5

had 'C' only and 8 had 'T' only. Find

i) How many did not take any of the three drinks

ii) How many take milk but not coffee?

OR

Q2) a) Show that (A-B)-C=A-(B $\cup$C) by using Venn diagram. **[5]**

b) Draw Venn diagram to prove that A-(B-C)=(A-B)$\cup$(A$\cap$ B $\cap$C) **[4]**

Q3) a) Prove that ~ $(p \wedge q)$ and ~ pv ~ q are logically equivalent. **[4]**

b) Obtain the dnf of the form $(p \rightarrow q) \wedge (\sim p \wedge q)$ **[4]**

OR

Q4) a) i) Show that $(p \wedge (p \rightarrow q)) \rightarrow q$. **[4]**

ii) $(p \rightarrow q) \leftrightarrow (q \vee \sim p)$

P.T.O.

b) Write the following statements in symbolic from **[4]**

i) Gopal is tall and handsome

ii) Gopal is tall but not handsome

iii) Gopal is neither tall not handsome

iv) It is false that Gopal is short or handsome.

Q5) a) Six different mathematics books, four different discrete structures books and different computer sciences books are to be arranged on a shelf.How many different arrangements are possible if **[4]**

i) The books in each subject must all be together.

ii) Only the discrete structures books must be together.

b) In how many ways can the letters in the word MISSISSPPI arranged?**[4]**

OR

Q6) a) In how many ways can the letters in the word "PIONEER" be arranged so that The two E's always together. **[4]**

b) In how many ways can 8 different books be divided among Sameer, Ajay, and Leela if Sameer gets 4 books, Ajay and Leela get 2 each. **[4]**

Q7) a) Use Warshalls algorithm to find transitive closure of relation R where

R = {(a,b)(b,a)((c,b) (c,d)(d,a)} **[5]**

b) Let f(x) = x+2, g(x)=x-2 and h(x)=3x for x$\in$ R, where R=set of real numbers. find gof(), fog().gog(),foh() **[4]**

OR

Q8) a) Let R be the relation on the set A = {5,6,8,10,28,36,48}. Let R={(a,b)/ a is a the divisor the b}. Draw the Hasse diagram. Determine whether R is reflexive, transitive and symmetric. **[5]**

b) Let A=(1,2,3,4) and R={(1,2),(2,3),(3,4)} be a relation on A. Find R* and draw its diagraph. **[4]**

Q9) a) Let G be a graph with e edges and n number of vertices then prove handshaking lemma. That is summation of degree all vertices is equal to twice e. **[4]**

Draw one such graphs.

b) Define the following **[4]**

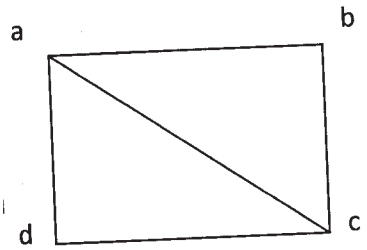
i) Self loop and parallel edges

ii) Simple and Multiple graph

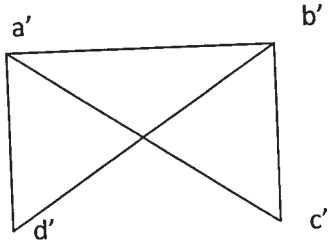
OR

Q10)a) Define regular graph and bipartite graph. Draw a complete bipartite graph which is not a regular graph. **[4]**

b) Show that G and H are Isomorphic **[4]**



G



H

Q11)a) Define **[4]**

i) Rooted tree

ii) m-ary tree

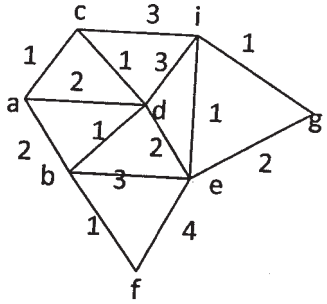
iii) full binary tree

iv) height of tree

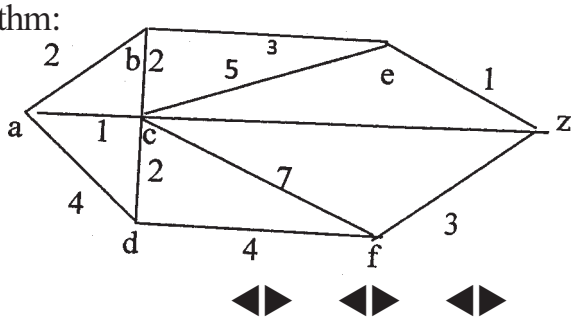
b) Construct an optimal tree for the weights 8, 9, 10, 11, 13, 15, 22. Find the weight of the optimal tree **[4]**

OR

Q12)a) Use Prim's algorithm to construct a minimal spanning tree for the weighted graph in following figure starting from vertex a. **[4]**



b) Find shortest path between a-z for the given graph; using Dijkstra's algorithm: **[4]**



Total No. of Questions : 12]

SEAT No. :

P1567

[Total No. of Pages : 4

[5061]-105

F.Y. M.C.A. (Under Engineering Faculty)

PROBABILITY AND STATISTICS

(2013 Course) (Semester-I)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Use of probability table, electronic pocket calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) A box contains 4 white, 5 red and 6 black balls. One ball is drawn at random from the box. Find the probability that **[4]**

i) The ball drawn is of white color.

ii) The ball drawn is of black color.

b) A certain firm has plants A, B and C producing 30%, 35% and 35% respectively of the total output. The probabilities of non-defective product from these plants are 0.80, 0.85 and 0.90 respectively. An item is selected from the total output of these plants and found to be defective. What is the probability that it is produced by plant B? **[5]**

OR

Q2) a) State and prove Baye's theorem. **[5]**

b) Bag I contains 2 green balls and 3 yellow balls and bag II contains 4 green and 1 yellow balls. A ball is chosen at random from one of bag is green. What is the probability that it has come from bag I? **[4]**

Q3) a) Define with example: **[4]**

i) Probability Density Function.

ii) Conditional Probability.

P.T.O.

b) It has been found that 60% of the rides of 2 wheeler put on crash helmets. Find the probability that: **[4]**

i) 4 out of 5 will be using their helmets.

ii) At least 4 out of 5 will be using their helmets.

(Use Poisson Distribution)

OR

Q4) a) Explain the terms: **[4]**

i) Independent events.

ii) Mean and Standard Deviation.

b) A random variable has the following probability mass function. **[4]**

x	0	1	2	3	4	5	6	7
p(x)	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2+7$

Find:

i) k ii) $p(3 < x < 6)$

Q5) a) Obtain mean of Poisson Distribution. **[4]**

b) Let (X, Y) be a discrete bivariate random variable with the following p.m.f. **[4]**

Y	X		
	1	2	3
0	1/12	1/6	0
1	0	1/9	1/5
2	1/18	1/4	2/5

Find marginal distribution for X and Y.

OR

Q6) a) A joint p.d.f. of random variable X is given by: **[4]**

$$f(x) = \begin{cases} c(x-1) & \text{for } 1 < x < 4 \\ 0 & \text{otherwise} \end{cases}$$

Find:

i) k ii) $f(2 < x < 4)$

b) Write note on: **[4]**

i) Gamma Distribution.

ii) Uniform Distribution.

Q7) a) What is point estimator and point estimate? What properties of estimator make it a good estimator? **[4]**

b) Explain the following terms: **[4]**

i) Sample ii) Sampling

iii) Random Sampling iv) Sample Statistics

OR

Q8) a) Explain the following terms: **[4]**

i) Confidence Interval.

ii) Central limit Theorem.

b) What is hypothesis testing? Explain the procedure for Testing of Hypothesis. **[4]**

Q9) a) What do you mean by sampling distribution? What is standard error? **[4]**

b) What is χ^2 distribution? Explain properties and applications of χ^2 distribution. **[4]**

OR

Q10)a) What is student's t-distribution? Explain properties and applications of student's t-distribution. **[4]**

b) Explain the following terms: **[4]**

i) Type I and type II errors.

ii) Level of Significance.

Q11)a) Explain Statistical Quality Control (SQC) with its limitations & applications. **[5]**

b) Explain the procedure to draw np chart. **[4]**

OR

Q12)a) Explain the χ^2 test as a test of goodness of fit. Write the steps. **[4]**

b) Given below are the values of sample mean X and sample range R for 10 samples, each of size 5. Draw the appropriate mean and range charts & comment on the state of control of the process. **[5]**

Sample No.:	1	2	3	4	5	6	7	8	9	10
Mean :	43	49	37	44	45	37	51	46	43	47
Range :	5	6	5	7	7	4	8	6	4	6

($A_2 = 0.577$, $D_3 = 0$, & $D_4 = 2.115$).

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Total No. of Questions : 12]

SEAT No. :

P1568

[Total No. of Pages : 2

[5061]-201
F.Y.M.C.A. (Engineering)
JAVA PROGRAMMING
(2013 Course) (Semester-II) (310909)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Answer any three questions from each section.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Use of calculator is allowed.***
6) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain the features of Java. **[4]**

b) With a suitable example explain the structure of a java program. **[4]**

OR

Q2) a) What is JVM? Why java is called platform independent? **[4]**

b) What is variable? Explain scope of variable with example. **[4]**

Q3) What is the difference between default and parameterized constructor? Explain copy constructor with example. **[8]**

OR

Q4) What is the difference between function overloading and function overriding? Explain function overloading with example. **[8]**

Q5) a) What is a package? How they are created? Explain with examples. **[5]**

b) What is abstract class? What is the difference between abstract class and final class? **[4]**

OR

Q6) a) What is an inheritance? Explain hierarchical inheritance with example. **[5]**

b) What is interface? What is the difference between class and interface? **[4]**

P.T.O.

SECTION - II

Q7) Explain with example two ways to create thread in java. **[8]**

OR

Q8) What is the need of exception handling? Write a program to create your ownexception-Nomatch Exception, Which throw when string do not match with string "Pune" **[8]**

Q9) Write down difference between java applet and java application. List and explain attributes of applet tag. **[8]**

OR

Q10) Write a program using applet to draw circle, line, triangle within rectangle and fill the circle and triangle with red color. **[8]**

Q11) a) What is event listener class? List and explain any one event Listener interface. **[5]**

b) Short notes on **[4]**

i) JCheckbox

ii) JTexfield.

OR

Q12) a) What is the difference between AWT and SWING in java? **[5]**

b) Short notes on **[4]**

i) JComboBox

ii) JButton.

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Total No. of Questions :12]

SEAT No. :

P1569

[Total No. of Pages :2

[5061]-202
F.Y.M.C.A. (Engineering)
DATA STRUCTURE USING C & C++
(2013 Course) (Semester - II) (310910)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) Define **[8]**

a) Data type

b) Data Object

c) Data Structure

d) Abstract Data Type

OR

Q2) Explain Storage representation (row major and column major) and their address calculation. **[8]**

Q3) Define linked list and explain its types. Explain in brief all the operations of singly linked list. **[8]**

OR

Q4) What are the applications of linked list. Discuss how the linked list is used for polynomial representation? **[8]**

Q5) Define Stack and explain how is it used in the recursion. **[8]**

OR

P.T.O.

Q6) a) Convert following infix expression to postfix. (A+B)*(C-D)/E. **[4]**

b) Explain how a queue operates. Describe priority queue. **[4]**

Q7) Define: **[8]**

a) Skewed tree

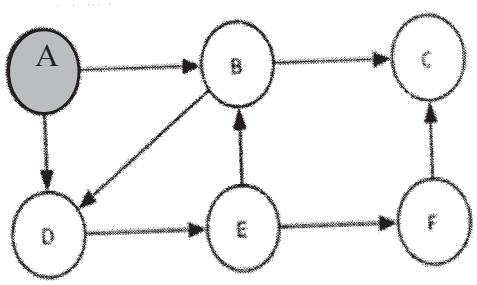
b) Expression tree

c) Decision tree

d) Spanning tree

OR

Q8) Apply DSF and BSF on the following graph. **[8]**



Q9) a) Define: **[4]**

i) Sort order

ii) Sort Stability

b) Explain Bubble Sort algorithm and state its efficiency. **[5]**

OR

Q10) Define Searching and explain sequential, binary and Fibonacci search. **[9]**

Q11)a) Explain sequential & direct access files and simple index files. **[4]**

b) Define hashing function and state its characteristics. **[5]**

OR

Q12) What is Collision? Discuss all the collision resolution techniques. **[9]**

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Total No. of Questions : 12]

SEAT No. :

P1571

[Total No. of Pages : 2

[5061]-204
F.Y. M.C.A. (Engineering)
SYSTEM ANALYSIS & DESIGN
(2013 Pattern) (Semester - II) (310912)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume Suitable data, if necessary.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) Discuss reuse oriented software engineering model. **[4]**

b) Discuss about Systems approach vs. engineering approach. **[4]**

OR

Q2) Discuss a case study on flexibility of information systems. **[8]**

Q3) Explain SDLC cycle in detail. **[8]**

OR

Q4) a) What is feasibility? Discuss any 2 types of feasibility. **[4]**

b) How to identify the attributes? **[4]**

Q5) a) Explain data dictionary with an example. **[4]**

b) Discuss ER diagram briefly with process specifications. **[5]**

OR

Q6) Draw Data Flow Diagram for Banking system. **[9]**

P.T.O.

SECTION - II

Q7) a) What are data input methods? Explain in detail. **[6]**

b) What is Cohesion? **[2]**

OR

Q8) Discuss ER Diagram. Draw ER diagram for blood bank management system. **[8]**

Q9) a) Discuss a case study on Software maintenance. **[4]**

b) What is importance of software testing? **[4]**

OR

Q10) What is Audit of Information system? Discuss in detail. **[8]**

Q11) a) What is component based software engineering? **[5]**

b) Discuss about service oriented architecture. **[4]**

OR

Q12) a) Write a note on Deployment of software. **[5]**

b) What is distributed software? **[4]**

Total No. of Questions : 12]

SEAT No. :

P1572

[Total No. of Pages : 2

[5061]-205

F.Y. M.C.A. (Faculty of Engineering)

MANAGEMENT THEORY & PRACTICES

(2013 Pattern) (Semester - II) (310913)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data, if necessary.***

SECTION - I

Q1) a) Explain Management as an Art, Science and Profession, Justify the statement. **[5]**

b) Define planning. Explain different steps involved in planning. **[4]**

OR

Q2) a) Do you feel that the Taylor's theory of Management is still valid? Justify. **[5]**

b) Write a historical development of management. **[4]**

Q3) Draw block diagram & explain line, staff & functional organization. **[8]**

OR

Q4) a) What are different types of co-operative sectors? **[4]**

b) With the help of block diagram explain matrix organization. **[4]**

Q5) a) Explain Black and Moutan's Theory. **[4]**

b) Define Leadership and explain importance of leadership to the organization. **[4]**

OR

Q6) a) Which are the traits, behavioral and situational approaches for Leadership style? **[4]**

b) Explain Hersey and Blanchard' Theory. **[4]**

P.T.O.

SECTION - II

Q7) a) Explain of Business process re-engineering. **[4]**

b) What is Quality in turn of an organization? What is Total Quality Management? Which are the techniques for TQM? **[5]**

OR

Q8) Write short note on: **[9]**

a) Bench marking.

b) Six sigma.

c) Theory of X, Y, Z.

Q9) a) Explain the role of Management Information Systems (MIS) in the academic. **[4]**

b) Explain in detail Transaction Processing Systems as an application of Management Information Systems. **[4]**

OR

Q10)a) What is Customer Relationship Management? Explain the challenge and trends in Customer Relationship Management. **[4]**

b) Explain concept of Online Payment Gateway. **[4]**

Q11)a) Write a difference between Open System and Closed System. **[4]**

b) Explain what-if analysis in Decision Support systems. **[4]**

OR

Q12)a) Write short note on - Herbert Simpson's Model. **[4]**

b) How to find risk in the future and how to take decision on the basis of it. **[4]**

Total No. of Questions :12]

SEAT No. :

P1573

[Total No. of Pages :2

[5061] - 301

S.Y.M.C.A. (Faculty of Engineering)

ADVANCED JAVA

(2013 Pattern) (Semester - III) (410901)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q. 3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of Calculator is allowed.***
5) ***Assume Suitable data if necessary.***

Q1) Define JDBC. Describe architecture of JDBC with proper syntax and semantics. **[8]**

OR

Q2) List the steps that connect database with java application and explain components of JDBC. **[8]**

Q3) Explain Role of Deployed Descriptor (.XML) file and container in details. **[8]**

OR

Q4) Explain lifecycle of Servlet in details. **[8]**

Q5) 'JSP is similar to servlet', Elaborate with proper explanation. **[8]**

OR

Q6) Write a short note on: **[8]**

a) Expression

b) Declaration

c) Scriplet

d) Include

P.T.O.

Q7) Explain Entity Bean with its lifecycle. **[8]**

OR

Q8) List and describe difference between Statefull and stateless session beans. **[8]**

Q9) Write & explain spring MVC form handling example. **[9]**

OR

Q10) State and explain Spring bean life cycle? **[9]**

Q11) What is HQL? Explain any four HQL queries with example. **[9]**

OR

Q12) Explain Hibernet Architecture in details. **[9]**

Total No. of Questions :12]

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SEAT No. :

[Total No. of Pages : 2

[5061]-302
S.Y.M.C.A. (Engg.)
DATABASE MANAGEMENT SYSTEM
(2013 pattern)(Semester - I) (410902)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) Write a short note on following (Any Two) **[10]**

a) Data Independance and data Models.

b) Database languages.

c) Data Abstraction.

OR

Q2) Explain components of DBMS along with its architecture. **[10]**

Q3) Explain following terms(Any 4): **[8]**

a) Entity

b) Attributes.

c) Keys.

d) Constraints.

e) Relationships.

OR

Q4) Construct an ER diagram for payroll system. **[8]**

P.T.O.

Q5) Explain following: **[8]**

a) Explain any 4 codd's rules with example.

b) Explain SQL. States its characteristics and advantages.

OR

Q6) State and explain all the DDL statements with syntax and examples. **[8]**

Q7) Explain Procedure and function in PL/SQL with syntax and Example. Also Explain way of passing parameters: IN,OUT,IN OUT **[8]**

OR

Q8) Write following programs: **[8]**

a) A function of Digitsum of a number. Example: 789=7+8+9=24

b) A function of Factorial of a number.

Q9) State and Explain 4NF and BCNF with suitable example. **[8]**

OR

Q10) Explain database design Methodology with example. **[8]**

Q11) Explain HBASE Architecture with neat and label diagram. **[8]**

OR

Q12) What is difference between Relational and Non-Relational database and Explain NoSQL. **[8]**

❄ ❄ ❄

Total No. of Questions : 12]

SEAT No. :

P1575

[Total No. of Pages : 2

[5061]-303

S.Y.M.C.A.(Under Faculty of Engineering)

OPERATING SYSTEMS

(2013 Course)(Semester-I) (410903)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Use of electronic pocket calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) Define : **[4]**

i) Assembler

ii) Compiler

iii) Linker

iv) Loader

b) Explain Distributed system **[3]**

c) Explain historical evolution of Operating system. **[2]**

OR

Q2) a) Explain Jobs, Programs and Processes. What is the degree of Multiprogramming? **[5]**

b) Explain an absolute loader with its advantages and disadvantages. **[4]**

Q3) a) Write a short note on System Calls. **[4]**

b) Explain Context Switching. **[4]**

OR

Q4) a) Explain the mechanism to handle the interrupt. **[4]**

b) What is Scheduling? Explain the Scheduling Criteria. **[4]**

Q5) a) What is deadlock? Explain conditions for deadlock occurrence **[4]**

b) Explain classical IPC problems in Operating System. **[4]**

OR

P.T.O.

Q6) a) What are three contexts in which concurrency arise? **[4]**

b) Explain the concepts: **[4]**

i) Semaphores

ii) Monitors

Q7) a) What is segmentation? Explain the concept of pure segmentation and pure paging in detail. **[6]**

b) Write a short note on: Virtual memory management **[3]**

OR

Q8) a) Compare contiguous and non-contiguous memory. **[5]**

b) Why demand paging approach is preferred over segmentation? Explain. **[4]**

Q9) a) Explain Disk Structure with suitable diagram. **[4]**

b) Discuss the factors affecting the efficiency & performance of a disk. **[4]**

OR

Q10)a) Explain SCAN algorithm with example. **[4]**

b) Discuss various file protection mechanism in detail. **[4]**

Q11)a) What is system call? Explain different system calls in LINUX. **[4]**

b) What is Pipe? Explain inter-process connection with pipes. **[4]**

OR

Q12)a) What are the kernel's responsibilities to facilitate I/O transfer? **[4]**

b) Explain different commands of Linux.(Any 4) **[4]**

Total No. of Questions :12]

SEAT No. :

P1576

[Total No. of Pages : 2

[5061]-304

S.Y.M.C.A. (Faculty of Engineering)

OBJECT ORIENTED ANALYSIS AND DESIGN

(2013 Course) (Semester - III) (Theory)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) a) Explain the Booch Methodology of UML. **[4]**

b) Explain in brief the phases of Rational Unified Process. **[4]**

OR

Q2) a) Explain the design view in 4 + 1 view architecture. **[5]**

b) Differentiate SSAD and OOAD. **[3]**

Q3) a) Draw use case diagram for Credit card processing system. Make necessary assumptions. **[5]**

b) Explain the concept of UML meta model. **[3]**

OR

Q4) a) Draw use case diagram for Online Movie Booking. Make necessary assumptions. **[5]**

b) What is OCL? Explain with example. **[3]**

Q5) a) The university has arranged a project competition for which students of MCA, MCS College students can register online in a group. The panels of Judges are invited from colleges of other Universities. The rules of the competition are as follows: **[5]**

i) One college can send any number of groups.

ii) One group can how minimum 2 and maximum 4 members.

iii) One group cannot develop more than one project.

iv) One student can participate in only one project group.

v) One panel of judges consists of minimum 2 and maximum 5 judges.

P.T.O.

vi) One panel of judges can judge many project.

The University declares result passed on the points given by the panel of Judges.

From the above assumption, Draw class diagram.

b) What is the concept of association? Explain with example. **[4]**

OR

Q6) a) Draw Class diagram for "Order processing system". Make necessary assumptions. **[5]**

b) Explain the concepts of Object diagram with example. **[4]**

Q7) a) Draw sequence diagram for buying a product from vending machine. Make suitable assumption. **[5]**

b) What is the concept communication diagram? **[3]**

OR

Q8) a) Draw interaction overview diagram for ATM system. Write suitable assumptions. **[5]**

b) Define the term Regions and Partitions with suitable example. **[3]**

Q9) a) Draw activity diagram for "Ticket Vending Machine". Make necessary assumptions. **[5]**

b) Describe the concept of Timing Diagram. **[3]**

OR

Q10)a) Explain the concept of State machine diagram with example. **[5]**

b) Define the term Fork and Join with example. **[3]**

Q11)a) Explain the concept of component diagram with suitable example. **[5]**

b) Describe UML web applications. **[4]**

OR

Q12)a) Draw deployment diagram for web application - online ordering of book. Write your assumptions clearly. **[5]**

b) What is the use of package diagram? Explain with example. **[4]**

Total No. of Questions : 12]

SEAT No. :

P1577

[Total No. of Pages : 5

[5061]-305
S.Y.M.C.A. (Engineering Faculty)
OPERATIONS RESEARCH
(2013 Pattern) (410905) (Semester - I)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Figures to the right indicate full marks.***
2) ***All questions are compulsory.***

Q1) a) Solve the following LP using simplex method. **[6]**

Minimize $z = 2x + 3y$

Subject to $x + y >= 5$

$x + 2y > 6$

$x_1 , x_2 >= 0$

b) What is feasible solution & optimal solution. **[3]**

OR

Q2) a) Solve the following LPP by big M Method **[6]**

Minimize $z = 2x + 3y$

Subject to $x + y >= 5$

$x + 2y >= 6$

$x_1 , x_2 >= 0$

b) Form the dual of the following primal problem. **[3]**

Min $z = 2x + 6y$

Subject to $9x + 3y >= 20$

$2x + 7y = 40$

$x, y >= 0$

P.T.O.

Q3) a) Obtain an optimal solution to the transportation problem by MODI Method. **[6]**

	D1	D2	D3	Supply
S1	0	2	1	6
S2	2	1	5	7
S3	2	4	3	7
Demand	5	5	10	

b) Write short note on the distribution Method. (MODI) **[3]**

OR

Q4) a) The head of the department has five Jobs A, B,C, D, E & five subordinates V, W, X, Y, Z. The number of hours each man would take to perform each job is as follows: **[6]**

	V	W	X	Y	Z
A	3	5	10	15	8
B	4	7	15	18	8
C	8	12	20	20	12
D	5	5	8	10	6
E	10	10	15	25	10

b) Write short note on Trans-shipment method. **[3]**

Q5) a) From the information given below, draw network diagram & critical path. Find the probability that the project will be completed within 55 days.**[5]**

Activity	t_o	t_m	T_p
1-2	4	6	8
2-3	5	7	15
2-4	4	8	12
3-6	15	20	25
3-5	10	18	26
4-6	8	9	16
5-7	4	8	12
6-7	1	2	3
7-8	6	7	8

b) Write a short note on Forward pass / Press calculation. **[2]**

OR

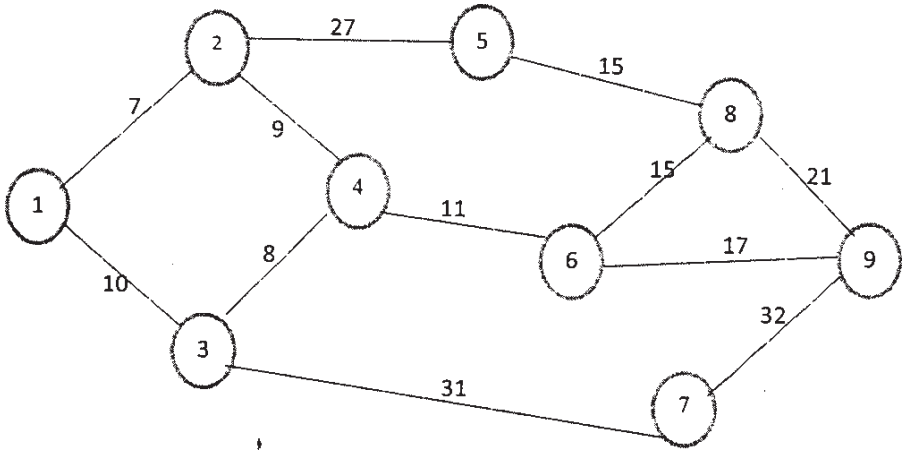
Q6) a) Listed in the table are the activities & sequencing necessary for a maintenance job on the heat exchange in a refinery. **[5]**

Activity	Description	Predecessor Activity
A	Dismantle Pipe Connection	-
B	Dismantle heater, closure & Floating Front	A
C	Remove tube bundle	B
D	Clean bolts	B
E	Clean heater & floating head front	B
F	Clean tube bundle	C
G	Clean shell	C
H	Replace tube bundle	F,G
I	Prepare shell pressure test	D, E, H
J	Prepare tube pressure test & reassemble	I

Draw a network diagram for the project.

b) Write a short note on backward pass / press calculations. **[2]**

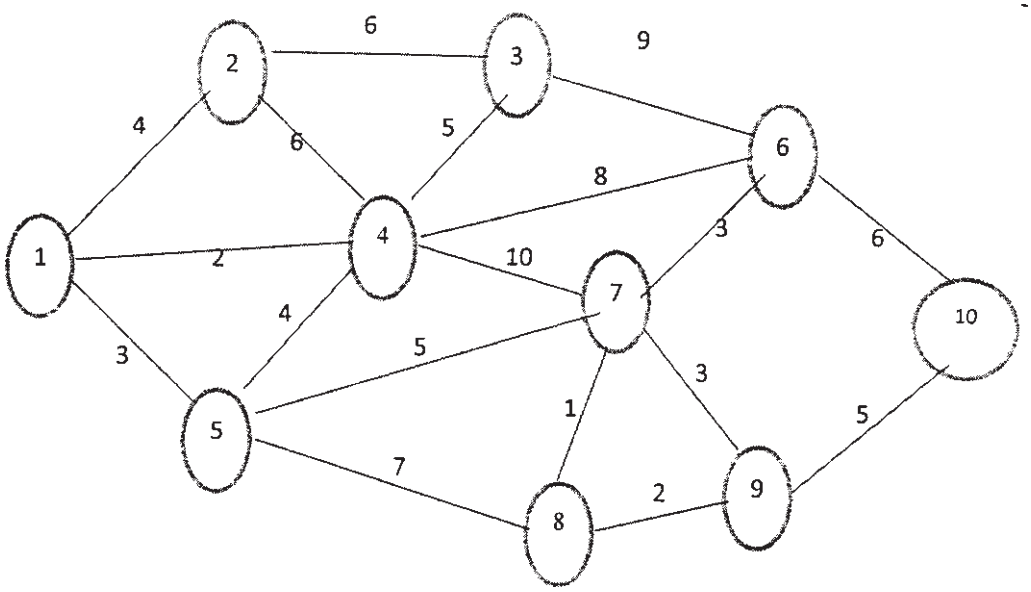
Q7) a) Find the shortest path from node 1 to node 9 of the distance network shown in above fig. using dijkstra's algorithm **[6]**



b) Write a note on minimum spanning tree by kruskal's algorithm. **[3]**

OR

Q8) a) Consider the distance network diagram shown in below figure. Find the minimum spanning tree of this network using the PRIM algorithm. **[6]**



b) Write algorithm of shortest path model by floyd's algorithm. **[3]**

Q9) a) Estimated levels of scales (units) **[6]**

Strategies	N1	N2	N3
S1	7,00,000	3,00,000	1,50,000
S2	5,00,000	4,50,000	0
S3	3,00,000	3,00,000	3,00,000

Which strategy should be concern executive choose the basis of

i) Maximin

ii) Minimax

iii) Maximax

iv) Laplace

b) Give the significance of decision analysis what are the steps of decision making process. **[3]**

OR

Q10)a) The research department of ABB has recommended the marketing department. An launch the shampoo of three different types. The marketing mango has to decide one of the types of shampoo to be launched under the following estimated pay offs for various levels of scales. **[6]**

Types of Shampoo	Estimated Rs. 15000	Levels of Rs.10,000	Scales (Unit) Rs.5000
Egg Shampoo	30	10	10
Clinic Shampoo	40	15	5
Deluxe Shampoo	55	20	3

What will be the marketing manager's decision

i) Maximin

ii) Minimax

iii) Maximax

iv) Laplace

b) What is decision making under risk? Explain excepted value criterion. **[3]**

Q11)a) What is simulation modeling? Explain Monte Carlo Simulation. **[5]**

b) Explain in brief generation of random number. **[2]**

OR

Q12)a) Generate three random numbers based on multiplicative congruential method using b = 17, c = 111, m = 103, seed = 7. **[5]**

b) Define Simulation with their merits & demerits in brief. **[2]**

Total No. of Questions :12]

SEAT No. :

P1578

[Total No. of Pages :3

[5061] - 401

S.Y.M.C.A. (Engg.)

ADVANCED WEB TECHNOLOGY

(2013 Pattern) (Semester - IV) (410909)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw neat diagrams wherever necessary.***

Q1) a) Write a short note on. Net framework. **[5]**

b) Explain managed and unmanaged code. **[4]**

OR

Q2) a) What is namespace? Explain System namespace. **[5]**

b) Explain jagged array with example. **[4]**

Q3) a) What is the difference between.

i) "Constant" and "read-only"

ii) "Dispose" and "finalize" variables in C#? **[4]**

b) Enumerate the concept of events in C#. Explain with suitable example. **[4]**

OR

Q4) a) What is garbage collector? How it works?. **[4]**

b) What is Boxing and Un-boxing concepts using in C#. Explain with suitable examples. **[4]**

P.T.O.

Q5) a) Explain WPF architecture. **[4]**

b) With an example discussed the advanced keywords of C#. Checked, Unchecked, volatile and size of. **[4]**

OR

Q6) a) Explain different types of trigger in WPE. **[4]**

b) Write a short note on Interfaces of System Collection. **[4]**

Q7) a) List and explain different types of validation controls supported in ASP.NET. **[5]**

b) What is Silverlight Runtime? Explain tools required to develop Silverlight applications? **[4]**

OR

Q8) a) Explain Silverlight architecture. **[5]**

b) What are web controls in ASP.NET? Explain. **[4]**

Q9) a) Explain Menu Control and Tree View Control in ASP.NET. **[4]**

b) What is binding and how many types of bindings are there in WCF? Explain. **[4]**

OR

Q10)a) What is the difference WCF and Web services? **[4]**

b) Explain ASP.NET Page life Cycle? **[4]**

Q11)a) Explain ADO. NET object model with help of suitable diagram. **[4]**

b) Write short note on XPath. **[4]**

OR

Q12)a) What is LINQ? Explain its query syntax in brief and give its advantages. **[4]**

b) Write Steps to access a database through ADO. NET. **[4]**

Total No. of Questions :12]

SEAT No. :

P1579

[Total No. of Pages :2

[5061] - 402

S.Y.M.C.A. (Faculty of Engineering)

BANKING FINANCIAL ACCOUNTING & MANAGEMENT

(2013 Pattern) (Semester - IV) (410910)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Solve either of Question 1 or 2, 3 or 4, 5 or 6, 7 or 8, 9 or 10, 11 or 12 in same answer sheet.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figurese to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) What is Financial Accounting? What are different terms used in accounting? Explain in brief? **[6]**

b) Explain the rules of Debit and Credit? **[2]**

OR

Q2) a) Discuss the assets and liabilities side of the balance sheet? **[6]**

b) Explain the difference between 2 - Column & 3-Column Cash Book. **[2]**

Q3) a) What are different elements of cost? Explain in brief? **[6]**

b) What do you mean by Marginal Costing? **[2]**

OR

Q4) The following information is obtained from Godrej Ltd., Gorkhpur for the year ended 31-3-2011 **[8]**

Sales (1,00,000 Units)	Rs.1,00,000
Marginal Cost	Rs.60,000
Fixed Cost	Rs.30,000

Calculate:

a) P/V Ratio

b) BEP (Sales-value)

c) Sales to earn a profit of Rs. 15,000

d) Profit when sales amounted to Rs. 1,40,000

P.T.O.

Q5) a) What is working capital? Explain the importance of working capital? **[6]**

b) Distinguish between current assets and fixed assets with example? **[3]**

OR

Q6) a) How the working capital can be calculated for a seasonal business like selling of Alphanso Mangoes in Summer? **[6]**

b) Explain the various sources of finanacing the working Capital. **[3]**

Q7) Explain the role of Reserve Bank of India in regulation of banking industry. **[8]**

OR

Q8) Explain the Savings Deposit scheme and various aspects related with it. **[8]**

Q9) What is meant by Payable at Par instrument? How it benefits bank customers? **[8]**

OR

Q10) Explain the concept of ECS Credit and Debit with example. **[8]**

Q11) What do you understand by Virtual Banking? Explain with example. **[9]**

OR

Q12) Why CBS is also known as Any Time Any Where Any How banking? Explain. **[9]**

Total No. of Questions : 12]

SEAT No. :

P1580

[Total No. of Pages : 2

[5061]-403

S.Y.M.C.A.(Faculty of Engineering)

COMPUTER NETWORK & INFORMATION SECURITY

(2013 Course)(Semester-IV) (410911)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Answer 3Questions from section-I and 3Questions from section-II.***
2) ***Answer to the two sections should be written in separate Book.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Is Fiber Optic cable is better than Coaxial Cable? Justify your answer with neat diagram. **[4]**

b) Explain Packet switching technique with neat diagram. **[5]**

OR

Q2) Explain: **[9]**

a) FDM

b) TDM

c) WDM

Q3) Draw and explain OSI model. **[8]**

OR

Q4) Draw and explain encoding technique for binary number 10111101 **[8]**

a) Binary encoding

b) Manchester Encoding

c) Differential Manchester encoding

Q5) a) Explain difference between connection oriented and connection less services. **[4]**

b) Write a short note on Load sharing technique. **[4]**

OR

P.T.O.

Q6) Explain Dijkstra's algorithm in detail **[8]**

SECTION-II

Q7) a) Explain Email Message format **[4]**

b) Write difference between POP3 and IMAP protocol. **[4]**

OR

Q8) a) Explain MIME protocol. **[4]**

b) Explain SMTP protocol with neat diagram **[4]**

Q9) a) Write difference between Public Key Cryptography and Private key Cryptography algorithm. **[4]**

b) Which algorithm is used to set the key between sender and receiver **[4]**

OR

Q10) Explain RSA algorithm with Example **[8]**

Q11) a) Write a short note on ARP hazards **[4]**

b) What is the use of biometric device. **[5]**

OR

Q12) a) Explain the importance of Secure socket layer with neat diagram **[5]**

b) Write a short note on Firewall. **[4]**

Total No. of Questions : 12]

SEAT No. :

P1581

[Total No. of Pages : 2

[5061]-404
S.Y.M.C.A.(Engg)
INFORMATION SYSTEMS AUDIT
(Elective-I)(2013 Course)(Semester-IV)(410912A)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) What do you mean by risk based auditing? Explain each type of risk with examples. **[8]**

OR

Q2) State the type of management controls and application controls. Explain use of any type of control with example **[8]**

Q3) Explain the nature of private key and public key cryptography. Which is more better and why? **[8]**

OR

Q4) a) Briefly Explain the risk areas and control used in Electronic Data Interchange **[4]**

b) Explain Internet vulnerability and controls. **[4]**

Q5) What are the three ways that auditors can involve in the system development process? Explain in detail? **[9]**

OR

Q6) Write short note on **[9]**

i) Risk & controls of OOM

ii) Quality control and Auditor's role in quality control.

Q7 What are the guidelines used to assist auditors judgment about the design of data entry screens? Explain with example. **[9]**

OR

P.T.O.

Q8) How effectiveness and efficiency can be achieved when novice users of an application systems entering data via menu driven language and question answer dialog with suitable example from IS Auditors viewpoint **[9]**

Q9) What is data privacy? What are the Data privacy policies are required in an organization. **[8]**

OR

Q10) Why an auditor is involved in staffing information system function? Explain any two staffing function with suitable example. **[8]**

Q11) State and Explain COBIT key principles for governance and management of enterprise IT in brief. **[8]**

OR

Q12) Explain 7 enablers of COBIT Framework with suitable diagram. **[8]**

Total No. of Questions : 12]

SEAT No. :

P1582

[Total No. of Pages : 2

[5061]-405
S.Y.M.C.A.(Engg.)
CYBER LAW
(Elective-I)(2013 Course)(Semester-II) (410912)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) Define Internet & discuss its Evolution in brief. **[8]**

OR

Q2) a) Explain Data Encryption **[4]**

b) Write Short notes on Digital signature. **[4]**

Q3) a) What is National Sovereignty? How is it related with personal freedom? **[4]**

b) Write short notes on Open Source movement. **[4]**

OR

Q4) Explain the Background of IT act Part-I and Part-II in brief. **[8]**

Q5) Write any 2 conventional cyber crimes with appropriate case study. **[9]**

OR

Q6) Critically analyze the issues of Jurisdiction in cyber space. **[9]**

Q7) a) Explain Laws relating to advertisitng & Taxation under e-commerce? **[4]**

b) Describe Forms & features of online contract. **[4]**

OR

P.T.O.

Q8) a) Explain the issues emerging from online contracts. **[4]**

b) Explain the payment Mechanism in cyberspace? **[4]**

Q9) Explain Management of IPRs in detail? **[8]**

OR

Q10)a) Explain liabilities of interent service providers? **[4]**

b) Explain lining & framing? **[4]**

Q11)a) Explain Rights to privacy & its legal framework? **[5]**

b) Discuss kid's privacy protection online? **[4]**

OR

Q12)a) Describe Privacy related wrongs & remedies? **[5]**

b) Discuss Evolving Trends in Data protection & Information security? **[4]**

Total No. of Questions : 12]

SEAT No. :

P1583

[Total No. of Pages : 2

[5061]-406

S.Y.M.C.A. (Under Engineering Faculty)

IT GOVERNANCE

(Elective-I)(2013 Course)(Semester-II) (410912)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Use of probability table, electronic pocket calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) Define IT Governance & explain Governance Assessment Maturity Model in brief. **[6]**

b) What is IT Governance? Define its purpose. **[3]**

OR

Q2) a) Explain Integrated IT Governance Framework & road-map. **[6]**

b) Explain future state of IT Governance. **[3]**

Q3) a) Explain in brief important of IT/Business Governance policy in any organizations. **[5]**

b) Explain the three critical pillars of IT Governance. **[3]**

OR

Q4) a) Explain in brief important components of IT Governance. **[5]**

b) Explain results of poor IT Governance. **[3]**

Q5) a) Discuss Emerging business/IT strategy in brief. **[4]**

b) Explain standards of IT Governance. **[4]**

OR

Q6) Explain the IT Governance best practice reference models & frameworks. **[8]**

Q7) a) Explain the Investment Management Maturity. **[5]**

b) Explain IT Relationship Model. **[4]**

OR

P.T.O.

Q8) a) What is the Board's Role in driving Business/IT Alignment. **[5]**

b) What are the five stages of IT? Explain in brief **[4]**

Q9) a) Explain the Principle for achieving excellence in project Management. **[5]**

b) Explain the roles of Program Management office(PMO). **[3]**

OR

Q10)a) Explain the Project Management Life Cycle Phases. **[5]**

b) Explain the PM Maturity Model. **[3]**

Q11)a) Explain the steps between Vendor/Outsourcing Selection. **[4]**

b) Explain the outsourcing decision making score-card. **[4]**

OR

Q12)a) What do you mean by Contract Negotiations & Management? **[4]**

b) Explain Key Governance Roles in outsourcing. **[4]**

Total No. of Questions : 12]

SEAT No. :

P1584

[Total No. of Pages : 2

[5061]-407
S.Y.M.C.A. (Engineering)
IT SERVICE MANAGEMENT
(Elective-I)(2013 Course)(Semester-IV) (410912)

Time :3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Use of calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain in detail service leadership and service mapping. **[4]**

b) Explain Benchmarking & flowcharting of service management. **[4]**

OR

Q2) a) Why service management is important? **[6]**

b) Explain the productivity of service management. **[2]**

Q3) a) Comment "Service management as a strategic asset". **[4]**

b) Explain Service management automation. **[4]**

OR

Q4) What is service design? Explain three major aspects of service design. **[8]**

Q5) a) What are key activities in service operation? **[4]**

b) Explain the process objectives & value challenges of service transition. **[5]**

OR

Q6) What is continual service operation? Explain its key principles and objectives. **[9]**

Q7) Explain scope, purpose and objectives of IT service continuity management. **[8]**

OR

Q8) Explain the IT service continuity management objectives, concept, activities & business continuity management. **[8]**

P.T.O.

Q9) What is information security management system? Explain its objectives and purpose. **[8]**

OR

Q10) What is access management? Explain its relationships with other service management processes. **[8]**

Q11) What is Technical Management? Explain key activities and relationships with other service management functions. **[9]**

OR

Q12) Explain key activities, purpose & objectives of IT operation management. **[9]**

Total No. of Questions : 12]

SEAT No :

P1585

[Total No. of Pages : 2

[5061]-408

S.Y.M.C.A. (Under Engineering Faculty)

ADVANCED DBMS

(2013 Course)(Semester - II)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Assume Suitable data if necessary.***

Q1) a) What factors are considered for measuring the cost of a query? **[4]**

b) Describe Binary Search Algorithm for selection operation. **[5]**

OR

Q2) a) "Select ENO, COL1, COL2, COL3 from TABLENAME where ENO=31;" This query is executed on a table having ENO as primary key. Discuss the algorithm related to the situation and give the formula to calculate query cost. **[5]**

b) Explain materialization evaluation with suitable example. **[4]**

Q3) a) Differentiate between centralized and client server architecture. **[4]**

b) Discuss the interconnection networks for parallel systems. **[4]**

OR

Q4) a) What are issues in data server systems? **[4]**

b) Explain parallel database architecture. **[4]**

Q5) a) What is distributed databases? Differentiate between vertical and horizontal partitioning. **[5]**

b) Explain need for distributed systems. **[3]**

OR

Q6) a) Explain distributed query processing methodology. **[4]**

b) Explain top down approach in designing a distributed database. **[4]**

P.T.O.

Q7) a) Explain structure type with an example **[4]**

b) Differentiate between array and multiset with an example. **[5]**

OR

Q8) a) Explain array and multiset types in SQL with an example. **[5]**

b) Explain object identity and reference types in SQL. **[4]**

Q9) What is DTD? Create a sample DTD explaining <!ELEMENT> and <!ATTLIST> **[8]**

OR

Q10)a) What is the purpose of XML? What are the rules for XML? **[4]**

b) Explain XML Schema document. **[4]**

Q11)a) Describe Graph Database model in detail. **[4]**

b) What is NOSQL? Explain its features and applications in brief. **[4]**

OR

Q12)a) Describe Data model in detail. **[4]**

b) Explain master - slave replication in drief. **[4]**

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Total No. of Questions : 12]

SEAT No. :

P1586

[Total No. of Pages : 2

[5061]-501
T.Y.M.C.A. (Engg.)
RECENT TECHNOLOGIES IN IT
(2013 Course) (semester-V) (510901)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to candidates:

1) ***Attempt Q1.or Q2, Q3 or Q4, Q5or Q6, Q7or Q8, Q9or Q10, Q11or Q12.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data if necessary.***

Q1) a) What is LAMP? Explain the characteristics and advantages of LAMP. **[6]**

b) Write a short note on Configuring Apache web server. **[3]**

OR

Q2) a) Explain the process of installation and configuration of LAMP stack. **[5]**

b) Differentiate between Static and Dynamic contents. **[4]**

Q3) a) Explain the concept of RDBMS Technology with a suitable example. **[4]**

b) Explain how MYSQL database is managed? **[4]**

OR

Q4) a) Explain and differentiate between GET and POST methods. **[4]**

b) Design a Form which accepts the input from the user for online Railway reservation system. **[4]**

Q5) a) Write PHP code to accept Passport registration information from the Customer, store it into the database and display the customer information. **[6]**

b) Explain Array_sum & Array_flip functions in PHP. **[2]**

OR

Q6) a) Explain the concept of Splitting and merging of Array with a suitable ex. **[6]**

b) Explain any 2 Data and Time Functions in PHP. **[2]**

P.T.O.

Q7) a) Explain the life cycle of a function in PHP. **[4]**

b) Write a short note on object constructors and destructors. **[4]**

OR

Q8) a) Explain the concept of class inheritance with a suitable example. **[4]**

b) Explain the concept of abstract classes with a suitable example. **[4]**

Q9) a) Explain how a file is created, read and deleted with a suitable example. **[4]**

b) Explain the operations of a file Opening writing with suitable example. **[4]**

OR

Q10)a) Explain the file connections HTTP fopen().and FTP fopen() **[4]**

b) Explain the concept Socket functions in detail. **[4]**

Q11)a) How a session is created and Handled? How does a session works? **[5]**

b) Explain in detail setcookie() function with a suitable example. **[4]**

OR

Q12)a) Explain how the session variables are encoded and decoded? **[5]**

b) Write a short note on Cookie handling. **[4]**

Total No. of Questions :12]

SEAT No. :

P1587

[Total No. of Pages :2

[5061]-502

T.Y.M.C.A. (Under Engineering Faculty)

SOFTWARE TESTING AND QUALITY ASSURANCE

(2013 Course) (Semester - V) (510902)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Use of probability table, electronic pocket calculator is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) Explain Quality, Quality Assurance and Quality Control. **[8]**

OR

Q2) What is process improvement? Explain Six sigma. **[8]**

Q3) Write test plan for coffee vending machine. **[8]**

OR

Q4) Explain test case with example. **[8]**

Q5) a) Explain with suitable example code complexity testing. **[5]**

b) Explain positive and negative testing. **[4]**

OR

Q6) a) Explain with suitable example boundary value analysis and equivalence partitioning. **[6]**

b) Write note on unit testing. **[3]**

Q7) a) What is usability and accessibility testing? **[4]**

b) Explain scenario testing. **[4]**

OR

P.T.O.

Q8) a) What is integration testing? Explain its types. **[5]**

b) Write note on Regression testing. **[3]**

Q9) a) Explain Developer/Tester support for Defect Repository. **[5]**

b) Explain defect classes. **[3]**

OR

Q10) a) What is defect? Explain origins of defect. **[5]**

b) Write note on defect repository. **[3]**

Q11)a) Differentiate between manual testing and automated testing. **[5]**

b) Write note on Selenium IDE. **[4]**

OR

Q12) What is automation testing? Explain different automation tools for software testing. **[9]**

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Total No. of Questions : 12]

SEAT No. :

P1588

[Total No. of Pages : 2

[5061]-503
T.Y.M.C.A.(Engg)
SOFTWARE ENGINEERING
(2013 Course)(Semester-V)(510903)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) a) Explain in detail Spiral Model of Software Development. **[6]**

b) Write a short note on: Personal Process Model **[3]**

OR

Q2) a) Explain in detail all the levels of CMMI with key process area. **[6]**

b) Write a short note on: Critical Software. **[3]**

Q3) a) What is Gantt Chart? Explain in brief. **[5]**

b) Write a short note on Risk Identification. **[3]**

OR

Q4) a) What do you mean by Work Breakdown Structure(WBS)? **[5]**

b) Explain any 3 Tools for managing project. **[3]**

Q5) a) What are the various factors for estimation of software cost? **[4]**

b) Write a note on : Process Improvement **[4]**

OR

Q6) a) What are the various project constraints in project mangement? **[6]**

b) What is Validation? **[2]**

Q7) a) Draw a diagram and explain the process of security risk assessment. **[4]**

b) What are the principle properties of Dependability? **[4]**

OR

P.T.O.

Q8) a) Write basic terminologies of Reliability? Explain with example. **[4]**

b) What is Hazard Identification and Hazard Assessment? **[4]**

Q9) a) What is mean by Service Engineering? **[4]**

b) Write the concept of SOA. **[4]**

OR

Q10) a) What do you mean by SAAS model? What are the benefits of SAAS Model? **[4]**

b) Explain the term: Client Server Computing **[4]**

Q11)a) Draw a diagram and Explain McCall's quality factors that affect the software quality. **[6]**

b) Define the following terms: **[3]**

i) Measure

ii) Measurement

iii) Metric

OR

Q12)a) Explain the metrics for source code. **[6]**

b) What is the purpose of Software Maintenance? Explain the maintenance metric. **[3]**

Total No. of Questions :12]

SEAT No. :

P1589

[Total No. of Pages : 2

[5061]-504

T.Y.M.C.A. (Under Engineering Faculty)

DATA WAREHOUSING DATA MINING BUSINESS INTELLIGENCE

(2013 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Assume suitable data, if necessary.***

Q1) a) Discuss the purpose of data warehouse. Also explain the 3 models of data warehouse based on architecture. **[6]**

b) What is data cleaning? **[3]**

OR

Q2) a) Explain data pre processing in detail. **[6]**

b) Differentiate between facts and dimensions. **[3]**

Q3) a) Explain the applicability of data mining in various fields. **[6]**

b) What are data objects and attribute types? **[2]**

OR

Q4) a) Explain data visualization. **[6]**

b) What is meant by data similarity? **[2]**

Q5) Explain the concept of classification with proper example. **[8]**

OR

Q6) Explain apriori algorithm with the help of an example. **[8]**

P.T.O.

Q7) a) Explain various components of BI. **[4]**

b) Differentiate between OLTP and OLAP. **[4]**

OR

Q8) a) Explain the various components of a warehouse. **[6]**

b) What is analytical user requirements? **[2]**

Q9) a) Explain the various BI Architectures. **[6]**

b) Differentiate between ROLAP and HOLAP. **[3]**

OR

Q10)a) Explain data architecture strategy. **[6]**

b) Differentiate between MOLAP and ROLAP. **[3]**

Q11)Write a note on BIRT. **[8]**

OR

Q12)Explain the various layout in BIRT. **[8]**

Total No. of Questions : 12]

SEAT No. :

P1590

[Total No. of Pages : 2

[5061]-505
T.Y.M.C.A.(Engg.)
ANIMATION & GAMING
(Elective-II)(2013 Course)(Semester-I)(510905)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) a) Explain DDA algorithm of line drawing. **[4]**

b) Explain cathode ray tube (CRT) in detail. **[4]**

OR

Q2) a) Explain Scan line Polygon filling algorithm. **[6]**

b) Explain applications of Computer Graphics. **[2]**

Q3) a) What is meant by onion skinning technique of animation? **[4]**

b) Discuss the role of shockwave format in web based animation. **[4]**

OR

Q4) a) Explain different types of animation. **[4]**

b) What is hierarchical animation and why it is necessary? **[4]**

Q5) a) What are the qualities of good animation character? **[5]**

b) What is meant by anatomy and body language? **[4]**

OR

Q6) a) Explain 2D virtual drawing? **[4]**

b) Explain various steps in developing animation character? **[5]**

Q7) a) Explain role of audio and networking in game development. **[3]**

b) What is software architecture? Explain 2D game software architecture. **[4]**

c) What is game? **[2]**

OR

P.T.O.

Q8) a) Explain role of graphics in game programming. **[3]**

b) Explain 3D game software architecture. **[4]**

c) What is game theory? **[2]**

Q9) a) What are Advantages of Writing Games in Java? **[4]**

b) Explain different types of computer games. **[4]**

OR

Q10) a) Explain basic JDK tools in java. **[4]**

b) State and explain different object oriented concepts in java. **[4]**

Q11)a) Explain blocking v/s non blocking loops. **[4]**

b) Explain actor class and its methods. **[4]**

OR

Q12)a) Explain basic game structure in java. **[4]**

b) Which are different state controls in java? **[4]**

Total No. of Questions : 12]

SEAT No. :

P1591

[Total No. of Pages : 2

[5061]-506
T.Y.M.C.A.(Faculty of Engineering)
MOBILE COMPUTING
(2013 Course)(Semester-V) (510905)

Time :3Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Solve either of Question 1 or 2, 3 or 4,5 or 6,7 or 8,9 or 10,11 or 12 in same answer sheet.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) Differentiate between 1G,2G and 3G technologies. **[9]**

OR

Q2) What is the concept of cell broadcast service? Explain the concept of Handover. **[9]**

Q3) Explain the concept of Wireless LAN **[8]**

OR

Q4) Explain the concept of Data broadcasting. **[8]**

Q5) a) Explain CODA File System and its features. **[4]**

b) Explain how the channel access scheme and acknowledgement for Datagram are used in mobile wireless network **[4]**

OR

Q6) a) Explain Quality of Service(QoS) in mobile wireless networks. **[4]**

b) *Disconnected operation* is the solution to the Disconnected Client in distributed system. Explain. **[4]**

SECTION-II

Q7) a) Explain MIDlet lifecycle in J2ME. **[4]**

b) What are the Application components provided in Android OS? **[4]**

OR

P.T.O.

Q8) a) What is the Record Management System? How the records are handled in J2ME? **[4]**

b) Explain about UI Layouts of Android. State the types of Layouts. Explain in brief any two of them. **[4]**

Q9) a) Explain File System Structure in Android. **[4]**

b) Define Dialogs, their use. How Dialogs are structured? **[4]**

OR

Q10) a) Explain Location Based Service. **[4]**

b) Write a program for accessing user's Current Location. (Assume *GPSTracker. java* file is available with you.) **[4]**

Q11) Write a short note on Content Provider. How can one store data in Android? **[9]**

OR

Q12) Explain SQLite Database. Create database for Student Details and perform following operations on it- **[9]**

a) *insert*

b) *delete*() &

c) show()

Total No. of Questions : 12]

SEAT No :

P1592

[Total No. of Pages : 2

[5061]-507

T.Y.M.C.A. (Engineering)

HIGH PERFORMANCE COMPUTER NETWORKS (Elective - II)

(2013 Course) (Semester - V) (510905)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the condidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Answer any three questions from each section.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Use of calculator is allowed.***
6) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain the mode of communication. **[4]**

b) Define the terms. **[4]**

1) SONET 2) DWDM 3) DSL 4) ISDN

OR

Q2) Explain the TCP/IP model in details. **[8]**

Q3) Explain the multimedia network application. **[8]**

OR

Q4) Explain the streaming stored multimedia. **[8]**

Q5) What is VPN? Explain the type of VPN. **[9]**

OR

Q6) a) What is traffic engineering? **[5]**

b) Explain the securities in VPN. **[4]**

P.T.O.

SECTION - II

Q7) Explain Little's theorem in detail. **[8]**

OR

Q8) Explain Poisson modeling and its failure. **[8]**

Q9) Explain the principle of cryptography? **[8]**

OR

Q10)How to set access control of the internet with firewall. **[8]**

Q11)Explain the network infrastructure management. **[9]**

OR

Q12)Explain the internet standard management framework. **[9]**

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