Total No. of Questions : 12] **SEAT No. :**

P2490 **[Total No. of Pages : 2**

[5356]-101
F.Y.M.C.A. (Engineering) (Semester - I)
C AND C++ PROGRAMMING
(2013 Pattern)

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) Explain the arithmetic, relational, logical, and assignment operators in C language. **[4]**

b) What is procedure oriented programming? Why C programming is called top down design approach? **[4]**

OR

Q2) a) What is the difference between variable and constant? **[4]**

b) Explain the use of break and continue statement in loops with example. **[4]**

Q3) Write a short note on structures? Explain various ways of writing a structure **[8]**

OR

Q4) Explain the different dynamic memory allocation functions in C with suitable examples. **[8]**

Q5) a) Write a program to store information of 5 students using array of structure. **[5]**

b) Write and explain any one preprocessor directives in C. **[4]**

OR

Q6) a) Write a program to perform matrix multiplication in C. **[5]**

b) What is function? Explain call by value and call by reference with example. **[4]**

Q7) a) Explain the scenarios where constructors and destructors will be used. **[4]**

b) How inline function differs from a normal function in C++. **[4]**

OR

Q8) a) Write a program to create a class to store Employee information with appropriate member functions and constructors for maintaining personal information and salary calculation. **[4]**

b) How information is hided in C++? Explain various method. **[4]**

Q9) a) What is the inheritance? Explain hybrid inheritances with example. **[4]**

b) Write a C++ program to overload area function to calculate area of any 3 geometrical shapes. **[4]**

OR

Q10) a) What is operator overloading? List the rules for operator overloading. **[4]**

b) How static members are declared? How it is different from member function? **[4]**

Q11) a) Explain managing console formatted I/O with example **[5]**

b) Short notes on "Writing in any text file" in C++ **[4]**

OR

Q12) a) Explain with example, how manipulators are used to output streams. **[5]**

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

Total No. of Questions : 12] SEAT No. :

P2491 [Total No. of Pages : 2

[5356]-102
F.Y.M.C.A. (Engg. Computer Organization) (Semester - I)
Computer Organization
(2013 Pattern)

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) Draw logic symbol and truth table for AND, NAND gate. **[4]**

b) Convert the following. **[5]**

i) $(10010110011)_2 = ?_{16}$

ii) $(1011)_8 = ?_{10}$

iii) $(12CD)_{16} = ?_2$

iv) $(2345)_{10} = ?_2$

v) $(6A2F)_{16} = ?_{10}$

OR

Q2) a) What do you mean by assembler, complier and interpreter with examples. **[6]**

b) State following Boolean algebra laws. **[3]**

i) Commutative Law

ii) Distributive Law.

iii) Associative Law

Q3) a) Explain Edge Triggered D flip-flop with timing diagram. **[6]**

b) List out four counter **[2]**

OR

Q4) a) What is mean by counter? List out four counter and Explain any one counter in detail. **[4]**

b) Explain full adder with suitable diagram and truth table **[4]**

Q5) a) What is ROM? Explain PROM, EPROM and EEPROM. **[4]**

b) Differentiate between DRAM and SRAM. **[4]**

OR

Q6) a) What is cache memory? What is the need of it? **[4]**

b) Explain DMA interfacing with processor. **[4]**

Q7) Explain RISC and CISC detail. **[9]**

OR

Q8) a) What is the need and role of CPU register? **[4]**

b) What is the role of System bus and describe its types. **[5]**

Q9) What are the key elements of superscalar processor organization. Explain in detail. **[8]**

OR

Q10) a) Explain Components of Microprocessor. **[4]**

b) Draw Pentium architecture diagram. **[4]**

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

i) SISD

ii) MIMD

b) Explain the cluster Architecture **[4]**

OR

Q12) What is parallel processing with respect to multi-processor organization? **[8]**

Total No. of Questions : 12] SEAT No. :

P2492 [Total No. of Pages : 2

[5356]-103
FYMCA (Under Faculty of Engg.)
Principles of Programming Practices
(2013 Pattern) (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) ***Assume Suitable data if necessary***

Q1) a) Explain the following term **[6]**

i) Compiler

ii) Firmware

b) Write a note on logical system architecture. **[3]**

OR

Q2) a) What are the different ways of acquiring software? List their advantages and limitations. **[5]**

b) Compare assembly language and high level language. **[4]**

Q3) a) What is program structure? Explain structure of C program. **[4]**

b) What are the problem solving aspects? **[4]**

OR

Q4) a) Differentiate between: **[4]**

i) Constant and variable

ii) Expression and Equation

b) Name the rules for naming constants and variables. **[4]**

Q5) a) What is mean by modular programming? Enlist the importance of modular programming? **[4]**

b) Explain the three logic structures? What is meant by coupling modules? **[4]**

OR

Q6) a) Write a program which uses a recursive algorithm. Explain how subroutines are generated. **[4]**

b) What is difference between call by value and call by reference? **[4]**

P.T.O.

Q7) a) Write an algorithm for Sine function computation. **[5]**

b) Write an algorithm to find the square root of a number. **[4]**

OR

Q8) a) Give similarities and dissimilarities between algorithm and flowchart. **[5]**

b) Write an algorithm for generation of Pascal triangle. **[4]**

Q9) a) What is mean by frequency of an algorithm? Explain its importance. **[4]**

b) What are the characteristics of good algorithm? **[4]**

OR

Q10) a) Explain time complexity and calculate the same for bubble sort. **[4]**

b) Explain Best case analysis using example. **[4]**

Q11) a) Assume base address 1000. Find the address of a[3][2] and a[1][2] of the array a[4] [4] **[4]**

b) What is data processing? Explain business data processing. **[4]**

OR

Q12) a) Explain look up table technique with example **[4]**

b) Write an algorithm selection sort. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2493 **[Total No. of Pages : 4**

[5356]-104
F.Y.MCA (Engineering Faculty)
DISCRETE MATHEMATICS
(Semester - I) (2013 Pattern)

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) Among 130 students 60 study Math 51 study Physics and 30 studies both Math and Physics. Out of 54 students studying Chemistry, 26 study Math and Chemistry 21 study physics and Chemistry 12 study Math, Physics and Chemistry. All the students studying neither Math nor Physics are studying Biology. Find:- **[4]**

i) How many are studying Biology?

ii) How many are not studying Chemistry are studying Math but no Physics?

iii) How many are studying neither Math nor Physics nor Chemistry?

b) Explain the principle of mathematical induction with example. **[4]**

OR

Q2) a) Prove DeMorgan's Law that is $\overline{A \cup B} = \overline{A} \cap \overline{B}$ and $\overline{A \cap B} = \overline{A} \cup \overline{B}$ **[4]**

b) Among 1 to 800 integers **[4]**

i) How many are not divisible by 3 nor by 5, nor by 7?

ii) How many are not divisible by 5 & 7 but divisible by 3?

Q3) a) Obtain CNF and DNF of **[4]**

i) $(P \rightarrow q) \wedge (q \rightarrow p)$

ii) $(P \wedge (p \rightarrow q)) \rightarrow q$

b) For the universe of all integers, let P(x), Q(x), R(x), S(x) and T(x) be the following statements: **[4]**

P(x): x>0

Q(x): x is even

R(x): x is a perfect square

S(x): x is divisible by 4

T(x): x is divisible by 5

Write the following statement in symbolic form.

i) At least one integer is even

ii) There exists an even integer divisibly by 5

iii) If x is even and x is perfect square, then x is divisible by 4

iv) No even integer is divisible by 5

OR

Q4) a) Determine whether the following is a tautology, contingency or a contradiction. **[4]**

i) $p \rightarrow (q \rightarrow p)$

ii) $(p \wedge (\sim p \vee q)) \wedge \sim q$

b) Write the following statements into symbolic form: **[4]**

i) If I am in a good mood or I am not busy, then I will go for movie.

ii) If you know .Net Programming and Oracle, then you will not get a job.

iii) If I am waiting for one hour then I am bored, and if there is no bus, then I am bored.

iv) Mohan is rich and unhappy.

Q5) a) Six different Math books, four different Discrete Structures books and three different Computer Language books are to be arranged on a shelf. How many different arrangements are possible if. **[5]**

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

ii) Only the Discrete Structures books must be together?

b) Consider the experiment of tossing a coin indefinitely until a head appears. Describe the sample space. What is the probability that experiment ends before the 6^{th} toss? **[4]**

OR

Q6) a) A and B are members of a club with a membership of 30. In how many ways can a committee of 10 be formed if. **[4]**

i) A must be included in the committee?

ii) A or B should be included but not both?

b) Two dice are rolled together. Event A denotes that the sum of the numbers on the top faces is even and event b denotes that there is a 4 on at least one of the top faces. Find $P(A \cup B)$ and $P(A \cap B)$ **[5]**

Q7) a) Find the transitive closure of R by Warshall's algorithm where **[4]**

A = {1, 2, 3, 4, 5, 6} and $R = \{(x, y) \| x - y | = 2\}$

b) Prove that the relation R "a – b is divisible by 5" for all a & b which are belongs to set of +ve integers is an equivalence relation. **[4]**

OR

Q8) a) Let $f(x) = x + 2$, $g(x) = x - 2$ and $h(x) = 3x$ for $x \in R$, where R is set of real numbers.Find gof, fog, fof, gog, foh, hog, hof, fohog. **[4]**

b) Draw the Hasse diagram for the relation R on A = {1,2,3,4,5}, whose relation matrix is given below: **[4]**

$M_R =$

1	0	1	1	1
0	1	1	1	1
0	0	1	1	1
0	0	0	1	0
0	0	0	0	1

Q9) a) Define the following terms: **[4]**

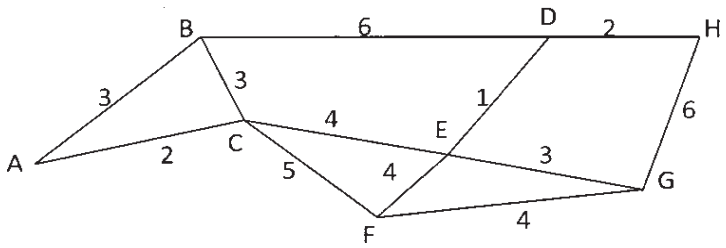
i) Edge connectivity

ii) Vertex connectivity

iii) Bipartite Graph

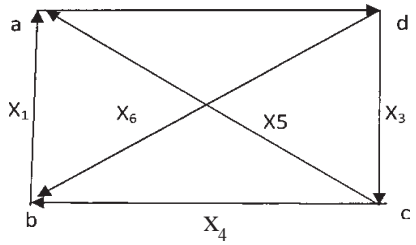
iv) Full binary tree

b) Find the shortest path between the vertices A and H in the graph shown in following figure. **[4]**



OR

Q10) a) Consider the following graph and find out incidence matrix and Adjacency matrix of a graph. **[4]**



b) Does K_{13} have an eulerian circuit? A Hamiltonian circuit? **[4]**

Q11) a) For the following set of weights, construct an optimal binary prefix code. For each weight in the set give corresponding code. **[5]**

word:

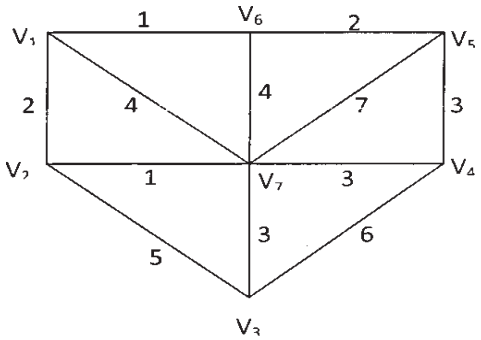
i) 8,9,12,14,16,19

ii) 5, 7, 8, 15, 35, 40

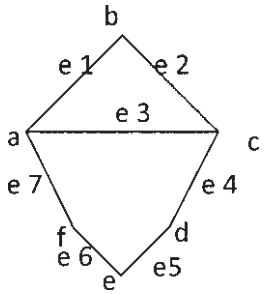
b) Define Full Binary Tree, Rooted Tree, center of Tree, Fundamental Cutset. **[4]**

OR

Q12) a) Determine the minimum spanning tree of weighted graph G using Prim's algorithm. **[5]**



b) Determine all possible cut-sets of the following graph G. **[4]**



Total No. of Questions : 12] **SEAT No. :**

P2494 **[Total No. of Pages : 3**

[5356]-105
F.Y. MCA (Engineering)
PROBABILITY AND STATISTICS
(2013 Pattern) (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) ***Assume Suitable data if necessary***
4) ***Use of probability table, electronic pocket calculator is allowed.***

Q1) a) Two cards are drawn from well shuffled pack of 52 cards. Find probability that they are both aces if first card is i) replaced ii)not replaced. **[4]**

b) State and prove Baye's theorem. **[4]**

OR

Q2) a) A certain company encourages its employees to participate in cricket and hockey. A survey indicates that 40% play cricket and 50% play hockey and 25% play cricket and hockey both. Find the probability of the event that **[4]**

i) an employee plays only hockey

ii) an employee plays only cricket

iii) an employee plays at least one game

b) We have 4 boxes. Box one contain 2000 components of which 5% are defective. Box two contains 500 components of which 40% are defective. Box three and four contain 1000 component each with 10% defective. We select at random one of the boxes and we remove at random a single component. **[4]**

i) what is the probability that the selected component is defective?

ii) what is the probability that selected component is defective on the basis of evidence it come from box two?

P.T.O.

Q3) a) Define : Random variable, Poisson distribution and negative binomial distribution **[4]**

b) What is discrete random variable? if X is a discrete random variable having the following probability distribution. **[4]**

X	–1	0	1
P[X = x]	1/5	3/10	1/2

Find the probability mass function of

i) 2X–1

ii) 2x–1/4

OR

Q4) a) Let X and Y be independent random variable with E[X] =3, $E[X^2]$=25 E[Y]=10 and $E[Y^2]$=164 find. **[4]**

i) E[2X-3Y+7]

ii) var[3X+Y–8]

b) Let X be a discrete random variable with probability mass function **[4]**

$P[X=x] = x^2/30$, x = 0,1,2,3,4

=0 otherwise

Find the median and mode of X

Q5) a) Write a short note on weibull distribution. **[3]**

b) $F_{xy}(x,y) = 1/240$ 8.5<x<l0.5 **[6]**

120 <y< 240

Find

i) E[X]

ii) E[Y]

iii) E[X,Y]

OR

Q6) a) Define **[6]**

i) joint distribution

ii) Discrete marginal density

b) Prove : COV [X,Y] = E[X,Y] — { E[X] * E[Y]} **[3]**

Q7) a) Following are the observation on random variable X. **[4]**

X = 406,395,400,450,390,410,415,401,408 Find sample mean and median

b) What is statistical probability? What are the characteristics of statistical probability? **[4]**

OR

Q8) a) What is point estimator? What properties of estimator will make it a good estimator? **[4]**

b) Describe Central Limit Theorem. **[4]**

Q9) a) What is significance testing? How does it differ from hypothesis testing? **[4]**

b) A random sample of size n is selected from a normal distribution with mean μ and variance σ^2 . Prove that the sample mean $\overline{X}$ is normally distributes with mean μ and variance σ^2/n **[4]**

OR

Q10) a) Explain the terms: **[4]**

i) Interval estimate

ii) Unbiased estimate

iii) Efficient estimate

iv) Confidence limit

b) What is P value of test ? How do we compute P value for two tailed test? **[4]**

Q11) a) Describe the chi-square test as a test of goodness of fit. **[3]**

b) What is control chart ? Name the types of control charts and explain them in brief. **[6]**

OR

Q12) a) Explain Statistical Quality Control with its advantages and limitations. **[6]**

b) Explain r*c test for independence **[3]**

Total No. of Questions : 12] **SEAT No. :**

P2495 **[Total No. of Pages : 2**

[5356]-201
F.Y MCA (Engineering)
JAVA PROGRAMMING
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:-

1) ***Answer any three questions from each section.***
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 JVM, JRE and JDK term? **[6]**

b) What is variable? List of the use of Variable in Programming language.**[2]**

OR

Q2) a) Explain the Features of Java **[6]**

b) Differentiate between StringBuffer and StringBuilder in Java programming. **[2]**

Q3) a) Is Class and Interface same in Java Programming? Justify your answer.**[4]**

b) Give an example where interface can be used to support multiple inheritances. **[4]**

OR

Q4) a) Discuss the need of static variables and static method in Java. **[4]**

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

i) Inner Class

ii) Abstract Class

Q5) a) Are constructors inherited? Can a subclass call the parent's class constructor? **[5]**

b) What is Autoboxing and Unboxing in Java? **[4]**

OR

Q6) Write a program to read and print employee information using multiple inheritances. **[9]**

P.T.O.

SECTION - II

Q7) a) What is thread? Explain the life cycle of thread with example. **[5]**

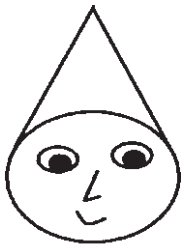
b) Write a note on Thread priority. **[3]**

OR

Q8) a) Describe how exception can be caught in a program? **[4]**

b) How the synchronization is capable to control the access of multiple threads with respect to multi-threading? **[4]**

Q9) a) Write a program to draw following diagram using Java applet. **[6]**



b) Write a description of any two Layout manager use for Java AWT. **[2]**

OR

Q10) a) Write down the steps to execute a simple Applet program. **[4]**

b) Describe AWT event hierarchy in details. **[4]**

Q11) a) Create an application to read a number from the user and print it in reverse order when the submit button is pressed. **[6]**

b) State the uses of icon in Java Swing. **[3]**

OR

Q12) a) List out the reason why swing is called lightweight components and AWT is called Heavyweight components in Java. **[5]**

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

i) JFrame

ii) JTree

Total No. of Questions : 12] **SEAT No. :**

P2496 **[Total No. of Pages : 2**

[5356]-202
F.Y. MCA (Engineering)
DATA STRUCTURE AND FILES
(2013 Pattern)

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 Sparse matrix and its presentation. Explain sparse matrix addition, and multiplication. **[8]**

OR

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

Q3) Define circular linked list and explain its types. Explain in brief all the operations of circular 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

Q6) a) Explain the algorithm to convert infix expression to postfix. **[4]**

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

Q7) Define **[8]**

a) Left Skewed tree

b) Expression tree

c) Complete Binary tree

d) Minimum cost Spanning tree

OR

Q8) Explain Dijkastra's algorithm and find shortest path for the following graph.**[8]**

P.T.O.

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

i) Internal Sorting

ii) External Sorting

b) Explain Quick Sort algorithm with exlmple. **[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]**

Total No. of Questions : 12] **SEAT No. :**

P2497 **[Total No. of Pages : 2**

[5356]-203
FYMCA (Engineering)
WEB TECHNOLOGIES
(Semester - II) (2013 Pattern)

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) Differentiate between 2 tier and 3 tier architecture with diagram. **[4]**

b) Explain in brief applications of web technologies in E-commerce. **[4]**

OR

Q2) a) Explain the term: **[6]**

i) Domain

ii) Web Hosting

b) Write a note on HTTP. **[2]**

Q3) a) Write a short note on HTML text formatting tags with example. **[4]**

b) Write a note on Frames in HTML. **[4]**

OR

Q4) a) Write an external CSS to set the following rules and link it in HTML file. Also mention whose precedence is more: internal or external style sheet. **[4]**

- Set background color as light blue
- Give heading and set text color of heading as green
- Set paragraph with font size 14
- Set text color as red

b) Explain <frameset> and <table> tags with example. **[4]**

Q5) a) Write a VB script code to reverse the string. Replace character 'a' with 'aaa' in the string and return the specified number of characters from the string. **[5]**

b) Explain with example primitive data type of VBscript. **[4]**

OR

Q6) a) What is scripting? What are different scenarios to make the web page dynamic? **[5]**

b) What is DHTML? Explain the roles and benefits of DHTML. **[4]**

P.T.O.

Q7) a) Explain the working of timers in Java Script. Also explain the drawbacks of using the timer, if any? **[4]**

b) How to use array in Java Script? Also explain types of array? **[4]**

OR

Q8) a) Write a Java Script function that accepts a string as a parameter and converts the first letter of each word of the string in upper case. **[6]**

b) Describe following events with their attributes and tags in Java Script. **[2]**

- Click
- Focus
- Load
- Submit

Q9) a) What is XML namespace? Why it is important? **[4]**

b) What is difference between DOM method and SAX method. **[4]**

OR

Q10) a) Consider the following example. **[4]**

```
<Productlnfo>
<Product>
    <Name> Apple iPhone 8</Name>
    <Description> 2GB RAM,64 GB internal memory, 1821 mAH
                  lithium-ion battery <Description>
    <Quantity> 01 </Quantity>
    <Price> 55000</Price>
</Product>
</Productlnfo>
```

b) Write a note on style sheets in XML. **[4]**

Q11) a) Write a note on session management in PHP. **[5]**

b) Explain the predefined classes in PHP. **[4]**

OR

Q12) a) Write a note on array in PHP. **[4]**

b) How can we get the browser properties in PHP? **[3]**

c) What is difference between $ message and $$ message? **[2]**

Total No. of Questions : 12] SEAT No. :

P2498 [Total No. of Pages : 2

[5356]-204
F.Y. M.C.A. (Engineering)
SYSTEM ANALYSIS AND DESIGN
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:-

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if necessary.***

Q1) a) Write a note on flexibility of Information System with suitable example. **[4]**

b) Explain waterfall model with a neat labeled diagram. **[4]**

OR

Q2) a) Discuss systems approach v/s engineering approach. **[4]**

b) Differentiate between software as a process and software as a product. **[4]**

Q3) a) What are the characteristics of requirement? Explain in detail. **[6]**

b) What is the need of validation in software engineering? **[2]**

OR

Q4) a) Explain software development life cycle in detail. **[6]**

b) Define: **[2]**

i) Technical Feasibility

ii) Economical Feasibility

Q5) a) Draw an ERD for payroll system and make necessary assumptions. **[5]**

b) Differentiate between physical and logical DFD. **[4]**

OR

Q6) a) Construct a Dataflow diagram (level 0 & 1) for online shopping. **[5]**

b) Write a note on Process specification with suitable example. **[4]**

P.T.O.

Q7) a) What is meant by cohesion? Explain its types with example. **[4]**

b) What is data input ? Explain coding techniques in detail. **[4]**

OR

Q8) a) What are the objectives of output design in software engineering. **[4]**

b) Discuss project and modules in detail. **[4]**

Q9) a) Write a note on Software maintenance. **[4]**

b) Explain 'Audit of Information System' in detail. **[4]**

OR

Q10) a) Explain importance of software testing. **[4]**

b) Write a note on Software Security Concept. **[4]**

Q11) a) What is distributed software engineering. Explain in detail. **[5]**

b) Give in brief about software development. **[4]**

OR

Q12) a) Explain service oriented architecture in detail. **[4]**

b) Illustrate component based software engineering with example. **[5]**

Total No. of Questions : 12] **SEAT No. :**

P2499 **[Total No. of Pages : 1**

[5356]-205
F.Y. M.C.A. (Faculty of Engineering)
MANAGEMENT THEORY & PRACTICES
(2013 Pattern) (Semester - II) (Theory)

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

Instructions to the candidates:-

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

Q1) Discuss contribution of Henry Fayol to the development Management. Justify the statement. **[8]**

OR

Q2) Give in brief historical development in management philosophy. **[8]**

Q3) What are the different types of organizational structure. **[8]**

OR

Q4) How the team effectiveness helps in overall development of an organization. **[8]**

Q5) Define Leadership and explain importance of leadership to the organization. **[9]**

OR

Q6) Explain Hersey and Blanchard's Theory of motivation. **[9]**

Q7) Explain Conflict management in detail with their strategies. **[8]**

OR

Q8) What are the steps in Business Process Re-engineering? Explain. **[8]**

Q9) Explain Transaction processing system in detail. **[9]**

OR

Q10) Explain the challenge and trends in Customer Relationship Management. **[9]**

Q11) Explain Decision Making tools- Autocratic, Participative. **[8]**

OR

Q12) Write short note on- Herbert Simpson's Model. **[8]**

Total No. of Questions : 12] **SEAT No. :**

P2500 **[Total No. of Pages : 2**

[5356]-301
S.Y.M.C.A. (Faculty of Engineering) (Semester - III)
Advanced Java
(2013 Pattern)

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.7or 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) What is J2EE? Explain J2EE Architecture. **[8]**

OR

Q2) Explain the steps to connect database in Java with example. **[8]**

Q3) Define Servlet. Explain Servlet Life Cycle with suitable diagram. **[9]**

OR

Q4) Explain with example get() & post() methods. **[9]**

Q5) Explain with example Error page in Exception Handling. **[8]**

OR

Q6) What is MVC? Explain the MVC architecture and its advantages. **[8]**

Q7) What is EJB? Discuss different types of EJB. **[8]**

OR

Q8) Explain Session bin with its lifecycle. **[8]**

Q9) Define Spring. Explain Spring Bean Life Cycle with suitable diagram. **[8]**

OR

Q10) Write a short note on **[8]**

a) Score Spring module

b) JMX

Q11) What is the advantage of HQL over SQL? Explain any two queries with example. **[9]**

OR

Q12) Write a short note on **[9]**

a) Hibernate elements

b) Persistence object

Total No. of Questions : 12] **SEAT No. :**

P2501 **[Total No. of Pages : 2**

[5356]-302
SYMCA (Engineering)
DATABASE MANAGEMENT SYSTEMS
(2013 Pattern) (Semester - III)

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) Describe the Components of DBMS. **[4]**

b) Write a note on Multiuser DBMS architecture. **[4]**

OR

Q2) a) Explain the role of system catalog in DBMS **[4]**

b) Discuss different layers of data abstraction **[4]**

Q3) a) What is composite key? Explain with example. **[4]**

b) Apply different constraints on STUDENT table **[4]**

OR

Q4) a) Discuss various keys used in database design. **[4]**

b) Draw a ER diagram for railway reservation system. **[4]**

Q5) a) What qualities DBMS should have to become a RDBMS? **[5]**

b) Write a note on Indexing in SQL **[4]**

OR

Q6) a) Explain with example DROP Alter and Truncate commands. **[4]**

b) Create view on Product table to calculate total product cost and vendor wise quantity in hand. **[5]**

Q7) a) Explain with syntax of different statements of Data Manipulation Language **[4]**

b) What is cursor? Explain cursor attributes with example **[5]**

OR

Q8) a) What is trigger? Explain with example. **[5]**

b) Write a note on PL/SQL stored function. **[4]**

Q9) a) What is the need of Normalisation? Explain 3NF in detail. **[5]**

b) What is Lossy and Lossless decomposition? Explain with example. **[3]**

OR

Q10) a) The closure set of F of functional dependencies for relational schema R=(A,B,C,D,E,F,G,H,I) is A->BCDE C->DE F->HI AF->GHI

Discuss the different dependencies present in this set. Normalise it upto BCNF. **[5]**

b) State the difference between –3NF and BCNF. **[3]**

Q11) a) Discuss the concept ofNOSQL database. **[4]**

b) Discuss importance of non-relational database system over relational database system **[4]**

OR

Q12) Discuss HBASE Architecture **[8]**

Total No. of Questions : 12] **SEAT No. :**

P2502 **[Total No. of Pages : 2**

[5356]-303
S.Y.M.C.A (Under Faculty of Engg.)
Operating Systems
(2013 Pattern)

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 note on Real Time systems. **[4]**

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

i) Linker

ii) Loader

OR

Q2) a) Define assembler. How does an assembler work? Explain with diagram. **[4]**

b) Define Operating System. Also state its characteristics. **[4]**

Q3) a) What is system call? What are the differences between system class and system commands? **[4]**

b) Explain the difference between preemptive and non-preemptive process scheduling with an example. **[4]**

OR

Q4) a) What is long term, short term and medium term scheduling? Which one of three is used in process scheduling? **[4]**

b) Explain interrupt mechanisms in operating system. **[4]**

Q5) a) Explain characteristics of deadlock. **[5]**

b) Write a note on Concurrency Control in operating system. **[4]**

OR

Q6) a) Write a note on: **[5]**

i) Monitors

ii) Semaphore

b) What is deadlock? Explain deadlock recovery. **[4]**

Q7) a) Write a short note on: **[4]**

i) External Fragmentation

ii) Segment map table

b) What is page fault rate? Explain with an example. **[4]**

OR

Q8) a) Explain the concept: **[6]**

i) Memory Fragmentation

ii) Memory Compaction

b) Compare demand paging and segmentation. **[2]**

Q9) a) Explain the methods for free space management in file. **[4]**

b) Write an algorithm for disk scheduling using "Shortest Service Time First" method. **[4]**

OR

Q10) a) What is file? Explain the different file operations? **[5]**

b) Explain the term: **[3]**

i) Seek Time

ii) Access Time

iii) Transfer Time

Q11) a) Explain linking process in execution of user program in Linux. **[5]**

b) State salient features of Linux operating system. **[4]**

OR

Q12) a) Explain the architecture of Linux system. **[4]**

b) Explain the following commands. **[3]**

i) kill

ii) ps

iii) whois

c) What are the two major functionality of Linux kernel? **[2]**

Total No. of Questions : 12] SEAT No. :

P2503 [Total No. of Pages : 2

[5356]-304
S.Y.M.C.A (Under Engineering Faculty)
OBJECT ORIENTED ANALYSIS AND DESIGN
(Semester - III) (2013 Pattern)

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) Explain Rumbaugh's Object Modeling Technique in brief. **[4]**

b) What are two views of Software Development? State the difference between them. **[5]**

OR

Q2) a) Describe The Booch Methodology that helps to design the system using object paradigm. **[5]**

b) Explain how Iterative and Incremental architecture approach are modeled in UML? **[4]**

Q3) a) List the relevant changes in features and enhancements in UML 2.0 **[4]**

b) Draw a Use Case diagram for Online Transaction Management System (e- shopping).Make necessary assumptions. **[4]**

OR

Q4) a) What is the difference between <<include>> and <<extend>>.Explain with suitable example. **[4]**

b) Which are various behavioral diagrams in UML 2.0? Explain role of each of them. **[4]**

Q5) a) Explain the following Adornment on association: Association Names, Qualified Association, Association Classes, N-ary Association. **[4]**

b) Give reverse and forward engineering of a Class diagram. **[4]**

OR

Q6) a) Explain Realization and Dependency relationship with example. **[4]**

b) Draw an Object diagram for Hotel Management system. **[4]**

P.T.O.

Q7) a) Explain the features Lifeline and Focus of Control with respect to sequence diagram. **[4]**

b) Explain the concept of Combined Fragments. **[4]**

OR

Q8) a) Draw sequence diagram for the following scenario: **[4]**

i) Search the phone number in directory

ii) Dial the number and place the call

b) What are Communication diagrams? What are the notations used for communication diagram. **[4]**

Q9) a) Explain Partitions and Regions with respect to Activity diagram. **[4]**

b) Draw a timing diagram for ATM System **[4]**

OR

Q10) a) What are Sub-states? Explain Sequential sub-states and concurrent sub-states with suitable diagram **[4]**

b) Draw an Activity Diagram for Elevator System. **[4]**

Q11) a) How deployment diagram will be useful to fully distributed client and server system? **[5]**

b) Draw package diagram for College Admission system **[4]**

OR

Q12) a) Describe component diagram. Give three types of components. **[4]**

b) How UML is useful in embedded systems? **[5]**

Total No. of Questions : 12] **SEAT No. :**

P2504 **[Total No. of Pages : 4**

[5356]-305
S.Y. MCA (Engineering)
OPERATIONS RESEARCH
(2013 Pattern) (Semester - III)

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

Q1) a) Solve the following LPP by the Simplex method **[6]**

Max Z = 2x1+5x2

Subject to:

xl+4x2<=24

3x1+x2<=21

xl+x2<=9

xl,x2>=0

b) Define: **[3]**

i) Decision Variable

ii) Feasible solution

iii) Optimal solution

OR

Q2) a) A manufactures produces bicycle and tricycle. Each at which must be produced on two machines m/c A and m/c B. M/c A has maximum of 120 hours available and M/c B has maximum 180 hours available. Manufacturing a tricycle requires 6 hours on m/c A and 3 hours on m/c B. Manufacturing a bicycle requires 4 hours on m/c A and 10 hours on m/c B. If profit are Rs. 45 for tricycle and Rs. 65 for bicycle. Formulate the LPP to have maximum profit. **[6]**

b) Explain the properties of LP model. **[3]**

P.T.O.

Q3) Find the basic feasible solution by using **[8]**

a) North West corner method

b) VAM

	1	2	3	Supply
	0	2	1	6
	2	1	5	7
	2	4	3	7
Demand	5	5	10	20

OR

Q4) Find the optimal assignment that will result in minimum cost using Hungarian method. **[8]**

	A	B	C	D	E
1	10	5	9	18	11
2	13	9	6	12	14
3	3	2	4	4	5
4	18	9	12	17	15
5	11	6	14	19	10

Q5) Draw a network diagram to represent the project and determine critical path using forward & backward pass. **[8]**

Activity	1-2	1-3	1-4	2-4	2-6	3-5	3-6	4-5	5-6
Time:	8	8	10	10	16	18	14	17	9

OR

Q6) The time estimates (in weeks) for the activities of a PERT network are given below: **[8]**

Activity	t0	tm	tp
1-2	1	1	7
1-3	1	4	7
1-4	2	2	8
2-5	1	1	1
3-5	2	5	14
4-6	2	5	8
5-6	3	6	15

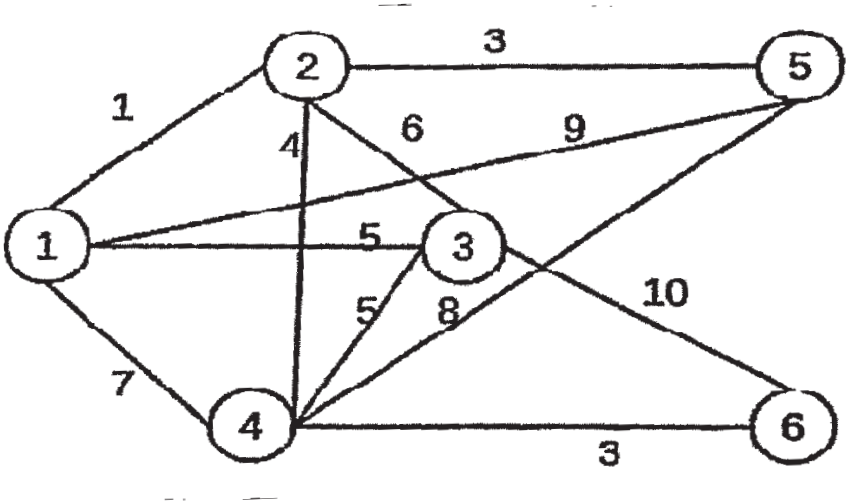
a) Draw the project network and identify all the paths through it.

b) Determine the expected project length.

c) Calculate the standard deviation and variance of the project length.

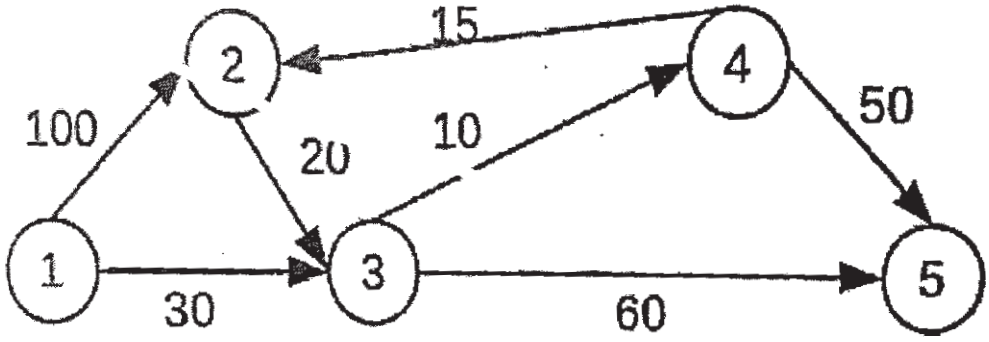
d) The probability that the project will be completed on schedule if the scheduled completion time is 20 weeks.

Q7) Midwest TV cable company is in process of providing cable service to 5 new housing development areas. The following figure dipcts possible TV linkages among the 5 areas. The cable miles shown on each arc .Determine the most economical cable network. Draw minimum spanning tree & calculate shortest path. **[9]**



OR

Q8) The network in following figures gives the permissible routes & their lengths in miles between city (node 1)and four other cities(nodes 2 to 5).Determine the shortest routes between city 1 and of the remaining 4 cities. Find the shortest route using Dijkstra's algorithm. **[9]**



Q9) The manager of a flower shop purchases the flowers on the previous day & deliver them to the customers on the next day on 8 am . The daily demand for roses is as follows: **[8]**

Dozens of roses	7	8	9	10
Probability	0.1	0.2	0.4	0.3

The manager purchases roses for Rs. 10 per dozen and sales them for Rs. 30. All unsold roses are donated. How many dozens of roses should manager order each evening to maximize the profit? What is the optimum expected profit.

OR

Q10) Estimated sales of propose type of Shampoo are given in table. What will be market managers decision that which Shampoo is to be manufacture. **[8]**

Types of shampoo	Estimated Level		
	Rs. 15,000	Rs. 10,000	Rs. 5,000
Egg. Shampoo	30	10	10
Clinic	40	15	5
Deluxe	55	20	3

Find

a) Maximin

b) Minimax

c) Laplace

d) Regret

Q11) A company manufactures around 200 mopeds. Depending upon the availability of raw materials and other conditions, the daily production has been varying from 196 mopeds to 204 mopeds, whose probability distribution is as given below: **[8]**

Production/day:	196	197	198	199	200	201	202	203	204
Probability:	0.05	0.09	0.12	0.14	0.20	0.15	0.11	0.08	0.06

The finished mopeds are transported in a specially designed three-storeyed lorry that can accommodate only 200 mopeds. Using the following 15 random numbers 82,89,78,24,53,61,18,45,04,23,50,77,27,54 and 10,simulate the process to find out

a) what will be the average number of mopeds waiting in the factory?

b) what will be the number of empty spaces in the lorry?

OR

Q12) a) Generate four random numbers based on multiplicative congruential method using b=17 , c=111, m=103, seed = 7. **[4]**

b) Write steps in Monte Carlo simulation. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2505 **[Total No. of Pages : 2**

[5356]-401
S.Y.M.C.A. (Engineering)
ADVANCED WEB TECHNOLOGY
(2013 Pattern) (Semester - IV)

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) Explain .NET Framework in Detail with Diagram. **[8]**

OR

Q2) a) Explain Managed Code and Unmanaged Code. Explain Advantages of Managed Code. **[4]**

b) Explain Relation of C# to .NET. **[4]**

Q3) a) Explain Following Terms in C# along with an example. **[5]**

- Namespace
- Classes
- Objects

b) What is Method Overriding in C# ? Explain with an example. **[5]**

OR

Q4) a) How Errors can be handle in C#? Explain. **[5]**

b) List out and explain characteristics of visual C# in short. **[5]**

Q5) What is Custom Control? How to Create Custom Control in Windows Presentation Foundation. **[8]**

OR

Q6) Explain Any 4 WPF 3.5 Simple Controls. **[8]**

P.T.O.

Q7) a) List out different Login Controls in ASP.NET and explain any one login control in detail. **[4]**

b) Explain SilverLight in Short. **[4]**

OR

Q8) a) What is web application? How to create windows form by using 'form' base class. **[4]**

b) Explain Silver light Architecture. **[4]**

Q9) Explain Windows Communication Foundation (WCF) in detail with Diagram. **[8]**

OR

Q10) Explain Following Web Services: **[8]**

- WSDL
- SOAP

Q11) Explain LINQ in detail. **[8]**

OR

Q12) How any Web applicaiton can be connect to relational database using ADO.Net? Explain with an example. **[8]**

Total No. of Questions : 12] SEAT No. :

P2506 [Total No. of Pages : 3

[5356]-402
S.Y.M.C.A. (Engineering Faculty)
BANKING AND FINANCIAL ACCOUNTING AND MANAGEMENT
(Semester - IV) (2013 Pattern)

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

Instructions to the candidates:-

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

Unit - I

Q1) a) Give classification of accounts. State the rules used to journalize the entry. **[4]**

b) Draw a layout of three columnar cash book. Explain in brief the importance of maintaining cash book separately. **[4]**

OR

Q2) Journalize the following transactions. **[8]**

1 Apr. 2014 Ganesh Commenced a business with Rs. 5000/-
2 Apr. 2014 Purchased goods worth Rs. 3000/- from Raj and sons.
3 Apr. 2014 Paid into bank Rs. 7000/-
4 Apr.2014 Goods worth Rs. 4000/- sold to Mahesh
5 Apr. 2014 Goods return by Mahesh Rs.2000/-
6 Apr.2014 Paid rent Rs. 1500/-
7 Apr. 2014 withdraw from bank Rs. 3000/- for office use

Unit - II

Q3) Explain in brief the various types of ratio analysis and its significance. **[8]**

OR

Q4) From the following information relating to XYZ Ltd. You are required to find out: **[8]**

a) P/V Ratio
b) Break Even Point
c) Profit

Total Fixed Cost Rs. 4500/-
Total Variable Cost Rs. 7,500/-
Total Sales Rs. 15,000/-

P.T.O.

Unit - III

Q5) a) What is working capital? Explain the importance of working capital. **[5]**

b) Explain the sources of working capital with suitable example? **[4]**

OR

Q6) Prepare Profit and Loss A/c from the following information for the year ending 3 1-03-2015. **[9]**

Salary and wages Rs. 8,000/-,
Interest Received Rs. 4000/-,
Discount allowed Rs.7,000/-,
Commission received 11,000/-,
Interest Paid 5000/-
Traveling Rs. 5000/
Commission Paid Rs. 6,000/-,
Depreciation Rs. 10,000/-,
Other office expenses 1,200/-
Sundry Income Rs. 15,000/-
Provision for doubtful debts 2,000/-,
Gross Profit for the year Rs. 1,25,000/-
Bad debt 1500/-,
Printing and Stationery 11,500/-,
Postage and telegram 7,500/-,
Rent and taxes Rs. 1,500/-
Medical Fee 3,000/,
Advertisement Rs. 5,000/-,

Unit - IV

Q7) List and explain in brief the functions of RBI. **[8]**

OR

Q8) Classify and explain different types of transactions in a bank? **[8]**

Unit - V

Q9) What do you mean by Core Banking System? Explain in brief the day begin and day end module characteristics and functions. **[8]**

OR

Q10) Differentiate between Net Banking and Mobile Banking. **[8]**

Unit - VI

Q11) a) Differentiate between NEFT and RTGS **[5]**

b) Explain in brief role played by the DICGC? **[4]**

OR

Q12) Write short notes on (any 3) **[9]**

a) Core Banking System

b) b)Concept of ECS Credit with example

c) Difference between Demand Draft and Cheque.

Total No. of Questions : 12] **SEAT No. :**

P2507 **[Total No. of Pages : 2**

[5356]-403
S.Y.MCA (Faculty of Engineering)
COMPUTER NETWORK & INFORMATION SECURITY
(Semester - IV) (2013 Pattern)

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) Which cable is used to connect two countries to transfer Internet Connectivity? Why. **[4]**

b) Explain difference between Packet switching technique and Circuit Switching Technique. **[5]**

OR

Q2) Explain Multiplexing techniques with example. **[9]**

Q3) Explain Go-Back-N ARQ protocol in detail. **[8]**

OR

Q4) Draw and explain encoding technique for binary number 11111011. **[8]**

a) Binary encoding

b) Manchester Encoding

c) Differential Manchester encoding

Q5) a) Write difference between IPv4 and IPv6. **[4]**

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

OR

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

Q7) a) How Domain Name System convert DNS to IP address write in detail. **[4]**

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

OR

Q8) a) Why MIME protocol is used Explain? in detail. **[4]**

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

P.T.O.

Q9) a) How Diffie-Hellman based Key algorithm works ? Explain with Example. **[4]**

b) Explain different types of Cipher. **[4]**

OR

Q10) Explain DES 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) Explain PKI Components and Application. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2508 **[Total No. of Pages : 2**

[5356]-404
S.Y.M.C.A. (Engineering)
INFORMATION SYSTEMS AUDIT (Elective - I)
(2013 Pattern)

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

Instructions to the candidates:-

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

Q1) a) What is Information Systems audit? **[4]**

b) Explain the different methodologies of IS audit. Explain factors which we are considering in audit risk. **[4]**

OR

Q2) a) Explain in detail the Information System Audit Standard. **[4]**

b) Explain the need of control and audit of computer Systems. Also explain the types of controls with examples. **[4]**

Q3) Write short note on any 2 **[8]**

a) Digital Signature

b) Network Audit

c) DBMS Audit

OR

Q4) a) Explain details of use of Digital Security in Electronic Payment. **[4]**

b) What is encryption? How it is done. **[4]**

Q5) a) Explain use of IS audit in SDLC in detail. **[5]**

b) Write short note on QA & QC and its impact on IS Audit. **[4]**

OR

Q6) a) Explain the different types of testing done in IS Audit in detail. **[5]**

b) What is a Systems Review? Why the reviews are required? **[4]**

P.T.O.

Q7) a) What is an evidence? What are the various evidence evaluation techniques? **[4]**

b) Explain the various validation controls at field, file and batch level with example. **[4]**

OR

Q8) a) What is business continuity plan? Explain the need of business continuity plan. **[4]**

b) What is Control? What are the control objectives? Explain in detail. **[4]**

Q9) a) Define the Process for implementing IT security Policy? **[4]**

b) Explain IT plans with respect to short term goals and long term goals? **[4]**

OR

Q10) a) Explain the concept of Segregation of Duty. **[4]**

b) What is role of a steering committee? **[4]**

Q11) a) Explain COBIT5 Principles. **[5]**

b) Explain domains and processes in COBIT5 framework. **[4]**

OR

Q12) a) Explain the COBIT5 implementation in Service Industry. **[5]**

b) Explain the benefits of COBIT5 over other standards. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2509 **[Total No. of Pages : 2**

[5356]-405
S.Y. M.C.A (Under Faculty of Engineering)
CYBER LAWS (Elective - I)
(2013 Pattern)

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 note on Data Security and Management. **[4]**

b) Explain the concept of Digital Signature with its benefits. **[4]**

OR

Q2) a) Explain UNCITRAL Model law on electronic commerce. **[4]**

b) Explain the law of convergence. **[4]**

Q3) a) Write a note on Open Source Movement. **[4]**

b) State the guidelines issued by various Ministries. **[4]**

OR

Q4) a) What are International Treaties? **[4]**

b) Write a note on e-governance. **[4]**

Q5) a) Explain the crimes related to Data Alteration. **[5]**

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

i) forgery and fraud

ii) Computer Vandalism

OR

Q6) a) Give Enforcement Issues in Cyberspace. **[5]**

b) Explain Applicable laws in Cyberspace. **[4]**

Q7) a) Explain law relating to advertising and Taxation under e-commerce. **[4]**

b) What is e-commerce? Explain its types. **[4]**

OR

Q8) a) Explain online contracts and discuss the issues emerging from online contracting. Give an authentic case study for the same. **[6]**

b) Explain the term Cyberspace. **[2]**

Q9) a) Explain P2P networking and its applications in cyber security? **[4]**

b) Write a note on Intellectual Property in Cyberspace. **[4]**

OR

Q10) a) Explain in detail liabilities of Internet Service Providers(ISP). **[4]**

b) Write a note on Web-testing. **[4]**

Q11) a) Discuss Evolving Trends in Data protection and Information Security. **[5]**

b) Explain the concept of Privacy in Cyber Law. **[4]**

OR

Q12) a) Explain any five ways to protect child's privacy online. **[5]**

b) Write a note on law regime in India for Cyber Security. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2510 **[Total No. of Pages : 2**

[5356]-406
S.Y. M.C.A. (Under Engineering Faculty)
IT GOVERNANCE
(2013 Pattern)

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) What are the prerequisites for Creating a Successful IT Governance Program, explain in detail. **[9]**

OR

Q2) a) Explain Balanced Score Card for Business in IT governance. **[5]**

b) What is IT Governance and Key Governance Roles. **[4]**

Q3) Explain Steps in Making IT Governance Real in detail. **[8]**

OR

Q4) Write short notes on **[8]**

a) A Generic Governance Process Improvement Model

b) Important components of IT Governance

Q5) Explain Current and Emerging Business/IT Strategy and Governance Best Practice Frameworks and Standards with suitable diagram **[9]**

OR

Q6) a) What are the benefits of Integrated IT Governance model. **[4]**

b) State the major areas that must be addressed on the journey to a higher level of IT governance maturity and effectiveness. **[5]**

Q7) Explain Investment (Portfolio) Management Maturity & IT Engagement (Relationship) Model **[8]**

OR

Q8) Write a short note on **[8]**

a) The Board's Role in Driving Business/ IT Alignment

b) Business and IT Plan Integration Flow

Q9) What are Project Management Life Cycle Phases & Key Components? explain in detail. **[8]**

OR

Q10) a) Explain the roles of Program Management Office(PMO). **[4]**

b) Explain the Principle for achieving excellence in project Management. **[4]**

Q11) a) Explain the steps between vender/outsourcing selection. **[4]**

b) What do you mean by contract negotiation and Management **[4]**

OR

Q12) Write short note on **[8]**

a) Major outsourcing trends & challenges

b) Vendor selection process flow

Total No. of Questions : 12] **SEAT No. :**

P2513 **[Total No. of Pages : 2**

[5356]-501
T.Y.M.C.A. Engg. (Semester - I)
Recent Technologies in IT
(2013 Pattern) (510901)

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 the Advantages of LAMP **[4]**

b) List the steps to configure Apache for PHP **[4]**

OR

Q2) a) What is PHP? Explain its use. **[4]**

b) How to set up PHP on Linux environment. **[4]**

Q3) a) Explain with query and example how to connect to a mysql database. **[4]**

b) Write a short note on UPDATE operations of mysql. **[4]**

OR

Q4) a) Write a php program to insert a student record in database. **[4]**

b) Explain phpmyadmin to manage database in short. **[4]**

Q5) a) Write a short note on Associative array in PHP. **[5]**

b) List and Explain any 2 function for Formatting string in PHP **[4]**

OR

Q6) a) Write a php code to show the use of Date Time functions. **[5]**

b) Explain how input is taken and how outputs are generated in PHP. **[4]**

Q7) a) Explain how function are defined and invoked in PHP. **[4]**

b) Explain with syntax and example how class and object is created in PHP. **[4]**

OR

Q8) a) Explain inheritance in PHP. **[4]**

b) Write a short note on interfaces in php. **[4]**

Q9) a) List and explain the steps for reading a text file in PHP. **[4]**

b) How to check the existence of any file in PHP? **[4]**

OR

Q10) a) Write a short note on working with Directories in PHP. **[4]**

b) Write a program to display the various file properties like creation date, last modified, size etc of any file in PHP **[4]**

Q11) a) Explain how to send a cookie to a browser in PHP? **[5]**

b) What is Query String? Explain with example. **[4]**

OR

Q12) a) How session are created and registered in PHP. **[5]**

b) Explain the various mechanism of sending values from one page to another in PHP. **[4]**

Total No. of Questions : 12] SEAT No. :

P2514 [Total No. of Pages : 2

[5356]-502
T.YMCA (Engineering)
SOFTWARE TESTING AND QUALITY ASSURANCE
(2013 Pattern) (Semester - V)

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) Define the term software quality metrics and explain in brief. **[4]**

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

OR

Q2) a) Explain the concept of software reliability **[4]**

b) What are the components of test plan? Explain execution of test plan in detail. **[4]**

Q3) a) Define verification and validation. **[2]**

b) Give the comparative study of different life cycle model. **[6]**

OR

Q4) a) What is test case? Write a test case template for login screen. **[5]**

b) Write short note on V-shape model. **[3]**

Q5) a) What is requirement based testing? Explain with example. **[5]**

b) What is static testing? Explain with suitable example. **[4]**

OR

Q6) a) Write a program to check given number is odd or even. **[7]**

i) Draw control flow diagram(CFD) for the above program.

ii) Calculate the cyclomatic complexity of the program using three techniques.

b) Write a note on Domain testing. **[2]**

Q7) a) Write short notes on usability and acceptance testing. **[4]**

b) What is scenario testing? Explain with suitable example.. **[4]**

OR

Q8) What is regression testing? Explain different types of regression testing with example. **[8]**

Q9) a) Explain with example how database testing is done. **[4]**

b) What is defect management? Explain with example. **[4]**

OR

Q10) a) Write short notes on testing of object oriented software testing. **[4]**

b) What is performance testing? Which are the different factors considered in performance testing? **[4]**

Q11) a) How web testing through selenium is done. **[5]**

b) Give the different automated testing tool. **[4]**

OR

Q12) a) Short note on: **[5]**

Selenium command

b) What is the difference between selenium and QTP. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2515 **[Total No. of Pages : 2**

[5356]-503
TYMCA (Engg.)
Software Engineering
(2013 Pattern) (Semester - V)

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) Explain the concept of Extreme programming. What is its importance. **[4]**

b) Explain critical software in detail. **[4]**

OR

Q2) a) What are the major tasks conducted as part of Clean room software. **[4]**

b) Explain all levels of CMMI. **[4]**

Q3) a) Explain any 3 tools for managing a project. **[4]**

b) How can risk be mitigated. **[4]**

OR

Q4) a) Explain Timeline chart or Gantt chart used for project planning. **[2]**

b) What do you mean by requirement negotiation & validation? List requirement validation checklist. **[6]**

Q5) a) What are the elements of configuration management system? What is the importance of baselines? **[5]**

b) Explain the process of improvement cycle. **[4]**

OR

Q6) a) What are the various factors for the estimation of software cost? **[5]**

b) What are the various project constraints in project management. **[4]**

Q7) a) What are the specifications of security. **[4]**

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

OR

Q8) a) Explain hazard assessment & hazard analysis in detail. **[4]**

b) In computer security terms, explain the difference between an attack and a threat. **[4]**

Q9) a) What are different issues arising from distributed system. **[5]**

b) Explain Service Oriented Architecture (SOA) in detail. **[4]**

OR

Q10) a) What is meant by service engineering. Explain in detial. **[5]**

b) Explain client server computing with suitable eg. **[4]**

Q11) a) Define the terms. **[3]**

i) Measure

ii) Measurement

iii) Metric

b) Draw diagram and explain McCalls quality factors that affect the software quality **[5]**

OR

Q12) a) What is the purpose of software maintenance. Explain metrics for testing. **[4]**

b) What is software quality? What are factors affecting software quality. **[4]**

Total No. of Questions : 12] SEAT No. :

P2516 [Total No. of Pages : 2

[5356]-504
TYMCA (Engineering Faculty)
DATA WAREHOUSING, DATA MINING & BUSINESS INTELLIGENCE
(Semester - V) (2013 Pattern)

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

Instructions to the candidates:-

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

Q1) a) Explain with a neat diagram the 3 tier architecture of a Data Warehouse. **[5]**

b) What is data pre-processing? Explain major tasks in data pre-processing. **[4]**

OR

Q2) a) Explain different Warehouse components with the help of diagram. **[5]**

b) Explain the terms MOLAP,ROLAP,HOLAP, and DOLAP. **[4]**

Q3) a) What are the major issues in data mining? Explain. **[4]**

b) Explain data visualization in detail. **[4]**

OR

Q4) a) Explain the issues related with data mining. **[4]**

b) What kinds of data and patterns can be mined in data mining? **[4]**

Q5) a) Explain in detail classification and prediction. **[4]**

b) What are the different phases in knowledge discovery? **[4]**

OR

Q6) What is association in data mining? Explain Apriori algorithm. With a suitable example. **[8]**

P.T.O.

Q7) a) Explain importance of ETL for business intelligence. **[4]**

b) How can statistical analysis of data improve business perspectives? **[4]**

OR

Q8) a) What is ODS? Explain its features in detail. **[4]**

b) Explain Business intelligence wrt e- commerce website. **[4]**

Q9) a) Explain various BI architecture. **[4]**

b) Compare between Data warehouse and Data Mart. **[4]**

OR

Q10) a) What is operation data store? Explain. **[4]**

b) Explain Atomic layer alternatives. **[4]**

Q11) List out business intelligence reporting tools explain any two. **[9]**

OR

Q12) Consider the scenario: A company 'ABC' in Automobile sector wishes to launch a new car 'XYZ', in a new country. Which aspects need to be studied and how will BI tool help? **[9]**

Total No. of Questions : 12] **SEAT No. :**

P2517 **[Total No. of Pages : 2**

[5356]-505
TYMCA (Engineering)
ANIMATION & GAMING
(Elective - II) (2013 Pattern)

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) Explain in detail DDA algorithm of line drawing. **[4]**

b) Write short note on CRT Monitors scan. **[4]**

OR

Q2) a) Explain in detail scan line polygon filling algorithm. **[4]**

b) Distinguish between Raster and Random scan display. **[4]**

Q3) a) What is meant by motion cycling and masking in animation? **[4]**

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

OR

Q4) a) Explain color cycling and morphing concept in animation. **[4]**

b) What is 3D animation? **[4]**

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

b) Explain steps in developing animation character. **[4]**

OR

Q6) a) Explain essentials of good animation character. **[4]**

b) Explain sketching and drawing in detail. **[5]**

Q7) a) Explain game design process in detail. **[7]**

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

OR

Q8) a) Explain architecture of game in detail. **[7]**

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

P.T.O.

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 rendering in game programming. **[4]**

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

OR

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

b) Explain collision detection in game programming. **[4]**

Total No. of Questions : 12] **SEAT No. :**

P2518 **[Total No. of Pages : 2**

[5356]-506
TY MCA (Engineering)
MOBILE COMPUTING
(2013 Pattern) (Semester - V) (Elective - II)

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 jf necessary***

SECTION - I

Q1) What are the different mobile phone technologies? Compare the 1G, 2G, 2.5G & 3G. **[9]**

OR

Q2) What is cellular network? Explain with suitable diagram. **[9]**

Q3) What is WAP? Explain the architecture of WAP with suitable diagram. **[8]**

OR

Q4) What is Bluetooth? Explain the architecture of Bluetooth with suitable diagram. **[8]**

Q5) a) What are the different data management issues in mobile computing? Explain in detail. **[4]**

b) What is data replication? Give the different techniques of data replication. **[4]**

OR

Q6) a) Explain the CODA file system and its features. **[4]**

b) Write a short notes on disconnected operations. **[4]**

P.T.O.

SECTION - II

Q7) Write short notes on following mobile operating systems. **[8]**

a) Android

b) Windows Phone

OR

Q8) a) What are the different user interface layouts of Android? Explain each in short. **[4]**

b) What are the different steps of creating views? Explain in short. **[4]**

Q9) Explain the location based services. How can one access them in Android? **[8]**

OR

Q10) a) Explain the file system structure of Android. **[4]**

b) Explain the different file management tool in android? **[4]**

Q11) What is SQLite database? Create the database for Employee details and perform the following operations. **[9]**

a) insert

b) Delete

OR

Q12) Write a program for sending Email on Android OS. **[9]**

Total No. of Questions : 12] SEAT No. :

P2519 [Total No. of Pages : 2

[5356]-507
T.Y. MCA
HIGH PERFORMANCE NETWORKS (Elective - II)
(2013 Pattern)

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

Instructions to the candidates:-

1) ***Attempt all questions***
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) a) Explain types of multiplexing. **[4]**

b) Write a short note on OSI model **[4]**

OR

Q2) a) Explain concept of ATM. **[4]**

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

Q3) a) Explain RSVP in detail. **[4]**

b) Explain protocols for real time interactive applications. **[4]**

OR

Q4) Explain scheduling and policing mechanisms in detail. **[8]**

Q5) a) Write a short note on traffic engineering. **[4]**

b) What is VPN? Explain its types. **[5]**

OR

Q6) a) Explain security in VPN. **[4]**

b) Explain tunneling to PPP. **[5]**

Q7) a) Explain Little's theorem. **[4]**

b) Explain need for modeling. **[4]**

OR

Q8) a) Explain Poisson Modeling in detail. **[4]**

b) Describe network performance evaluation. **[4]**

P.T.O.

Q9) a) Explain principles of cryptography. **[4]**

b) Explain types of attacks. **[4]**

OR

Q10) a) What is firewall? How it works? **[4]**

b) Explain symmetric key cryptography. **[4]**

Q11) Explain infrastructure for network management in detail. **[9]**

OR

Q12) Explain **[9]**

a) SMI

b) MIB

c) SNMP