(DMCA201)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
SOFTWARE ENGINEERING

Maximum Marks 30
Answer all questions

Q1) Explain about software process frame work in detail.

Q2) Explain how both waterfall model and prototyping model can be accommodated in the spiral process model.

Q3) Describe various prototyping techniques and discuss on analysis and modeling.

Q4) Describe decomposition levels of abstraction and modularity concepts in software design.

Q5) Discuss the difference between black box and white box testing models.

Q6) Briefly explain about various CMM levels.

Q7) Write the distinct steps in requirements engineering process?

Q8) Describe how software requirements are documented?

Q9) With an example explain about DFD.

(DMCA201)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
SOFTWARE ENGINEERING

Maximum Marks 30
Answer all questions

Q1) What are the characteristics of a good design?

Q2) Describe about software failures and faults?

Q3) Describe unit testing and integration testing.

Q4) Write about metrics for source code.

Q5) Define validation and verification.

Q6) Define cohesion.

Q7) How do you evaluate user interface?

Q8) What is static and dynamic testing?

Q9) Define boundary analysis.

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(DMCA202)

ASSIGNMENT 1
MCA DEGREE EXAMINATION, MAY - 2018
Second Year
Programming with Java

Maximum Marks 30
Answer all questions

Q1) Discuss various object oriented programming concepts of Java.

Q2) What is inheritance? Discuss various forms of inheritance in Java.

Q3) Explain the purpose of following keywords with suitable example:
   i)   Final   ii)   Garbage collection
   iii) Super   iv)   Static

Q4) What is an Interface? How it is created? Explain its use with suitable example.

Q5) What is Event Handling in java? List out the available event classes and listener interfaces with suitable example.

Q6) What is byte code? How does JVM help to implement the platform independence nature?

Q7) Describe various data types in java and mention its size.

Q8) Write about different access specifiers in java.

Q9) Explain about method over loading with example.

(DMCA202)

Second Year

Programming with Java

Maximum Marks 30
Answer all questions

Q1) Differentiate between

   i)   Buffered Reader and Buffered Writer.

   ii)   Byte stream and character streams

Q2) What is an exception? Describe different types of user defined exception.

Q3) Describe applet life cycle with state diagram.

Q4) Briefly explain the following with syntax:

   i)   Checkbox

   ii)   Scrollbar

Q5) What is type casting?

Q6) What is wrapper class?

Q7) Define constructor

Q8) Define package

Q9) Define thread

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(DMCA203)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
COMPUTER NETWORKING

Maximum Marks 30
Answer all questions

Q1) Explain about various multiplexing techniques.

Q2) Explain about OSI network model.

Q3) Explain about IEEE802.3 and 802.2 Ethernet.

Q4) Explain about various routing schemes.

Q5) Explain about DES.

Q6) Explain about analog signal and digital signals.

Q7) Explain about encoding schemes.

Q8) Explain about Token Ring.

Q9) Explain about ISDN.

(DMCA203)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
COMPUTER NETWORKING

Maximum Marks 30
Answer all questions

Q1) Explain about Virtual LAN.

Q2) Explain about hierarchical addressing.

Q3) Explain about SNMP.

Q4) Explain about security threats.

Q5) Explain about amplitude modulation.

Q6) What is radio waves?

Q7) Explain about integrated switches and hubs.

Q8) Explain about HTML.

Q9) Explain about firewall.

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(DMCA204)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY - 2018

Second Year

Computer Algorithms

Maximum Marks 30
Answer all questions

Q1) Explain about asymptotic notations used to measure the running time of algorithm.

Q2) Write a sub routine for merge sort illustrate for data n = 10 and also compute its complexity.

15, 26, 19, 29, 14, 11, 6, 22, 5, 7.

Q3) What is optimal binary search tree? Construct an optimal binary search tree for the following items with probabilities given in the table below.

Items	1	2	3	4	5
Probability	0.24	0.22	0.23	0.3	0.01

Q4) Constrict Huffman code for the following data

P (A) = 0.1 = p (B), p (C) = 0.3, p (D) = 0.14, p (E) = 0.12 and p (F) = 0.24

Encode the text CAD and Decode 10011011011101

Q5) Illustrate branch and bound technique with suitable example.

Q6) Represent the following functions in terms of Big O and Omega (Ω) notation:

$$f(n) = 3n^{1.5} + (\sqrt{n})^3 + \log n$$

Q7) Briefly explain about divide and conquer method.

Q8) Write about DFS based topological sorting problem with suitable example.

Q9) Solve the all-pair shortest path problems for given adjacent matrix graph using Floyd's Algorithm.

$$\begin{bmatrix} 0 & 4 & 8 & \infty \\ \infty & 0 & 5 & 12 \\ \infty & \infty & 0 & 7 \\ 5 & \infty & \infty & 0 \end{bmatrix}$$

(DMCA204)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY - 2018

Second Year

Computer Algorithms

Maximum Marks 30
Answer all questions

Q1) State and explain about N – queen's problem.

Q2) Find the subset from the given sum using back tracking.
S = {1, 2, 5, 7} and d = 8.

Q3) Write about Kruskal's algorithm to construct minimum spanning tree.

Q4) Find optimal solution for 0/1 knapsack problem (w1, w2, w3 w4) = (10, 15, 6, 9), (p1, p2, p3, p4) = (2, 5, 8, 1) and m = 30.

Q5) Prove that $\sum_{k=0}^{n} k3 = \Theta(n^4)$.

Q6) State job sequencing problem.

Q7) What is meant by Hamilton Cycles?

Q8) Define backtracking.

Q9) Define connected and bi-connected components.

(DMCA205)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
DISTRIBUTED OPERATING SYSTEMS

Maximum Marks 30
Answer all questions

Q1) Discuss various hardware and software concepts in distributed OS.

Q2) Explain ATM networks in detail.

Q3) Discuss the issues that have to be considered while allocating processes to processors in distributed systems.

Q4) Explain distributed algorithm for Deadlock detection and prevention.

Q5) Discuss different approaches to solve multi copy update problem, for file replication in the distributed file systems.

Q6) Explain Light weight RPC? Is it possible to implement light weight RPC in railway reservation system?

Q7) Write short notes on atomic transactions.

Q8) What is thread? Describe different types of threads.

Q9) Explain Distributed clock synchronization algorithm.

(DMCA205)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
DISTRIBUTED OPERATING SYSTEMS
Maximum Marks 30
Answer all questions

Q1) Explain desirable features of Process migration in Distributed Operating system.

Q2) Discuss the relative advantages and disadvantages of using full-file caching and block caching mechanism of a distributed file systems.

Q3) Write short notes fault tolerance.

Q4) Write about inter-process communication and co-ordination mechanisms.

Q5) Give any two goals of DOS.

Q6) What is scheduling?

Q7) What is thrashing?

Q8) What is stateless file server?

Q9) Define mutual exclusion.

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(DMCA206)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY - 2018
Second Year
COMPUTER GRAPHICS

Maximum Marks 30
Answer all questions

Q1) Illustrate Bresenham's circle generation algorithm with suitable example.

Q2) Explain about Sutherland – Hodgman polygon clipping algorithm.

Q3) Discuss about parallel and perspective projections with its matrix representation.

Q4) What are the properties of B-splines? Compare B – splines with Bezier curves.

Q5) Explain about Z – buffer, Sub division algorithms with suitable example.

Q6) Describe various ways to representing the images.

Q7) Explain about character generation algorithm with example.

Q8) Explain about antialiasing.

Q9) Derive the transformation matrix, when point P (x, y) is reflected about line $y = mx + c$.

(DMCA206)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY - 2018
Second Year
COMPUTER GRAPHICS

Maximum Marks 30
Answer all questions

Q1) Explain about window - to - viewport mapping.

Q2) Write short notes on 3-D clipping.

Q3) Describe the problem of interpolation.

Q4) Write a procedure to eliminate hidden lines.

Q5) Give the applications of computer graphics.

Q6) Define region filling.

Q7) Define point clipping.

Q8) What is quadratic surface?

Q9) Define aspect ratio.

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(DMCA207)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
E-COMMERCE

Maximum Marks 30
Answer all questions

Q1) Explain about e-business models based on the relationship of transaction types.

Q2) State and discuss e-marketing strategies with example.

Q3) Explain about digital token −based e – payment system and smart card cash payment system mechanisms and also their advantages and disadvantages.

Q4) Explain the role played by e – supply chain planning tools in managing supply chain of an e – business.

Q5) Discuss seven dimensions of e − commerce strategy.

Q6) Describe – commerce opportunities for industries.

Q7) Write about internet standards and specifications.

Q8) Describe different possible security incidents on the internet.

Q9) Write about digital payment requirements.

(DMCA207)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY – 2018
Second Year
E-COMMERCE

Maximum Marks 30
Answer all questions

Q1) What role does cryptography play in e – commerce?

Q2) Briefly explain about e – CRM toolkit

Q3) Describe different e – supply components.

Q4) Write the applications of mobile commerce.

Q5) What is supplier centric B2B electronic commerce.

Q6) What is meant by electronic cheque?

Q7) What is e – marketing value chain?

Q8) Give the advantages of ERP.

Q9) What is mobile commerce?

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(DMCA208)

ASSIGNMENT 1
M.C.A. DEGREE EXAMINATION, MAY - 2018
Second Year
PROBABILITY AND STATISTICS

Maximum Marks 30
Answer all questions

Q1) Prove Baye's theorem and explain with suitable example.

Q2) Companies B1, B2, B3 produce 30%, 45%, 25% of the cars respectively. It is known that 2%, 3%, 2% of these cars produced from B1, B2, B3 are defective.

    a) What is the probability that a car purchased is defective.

    b) If a car purchased is found to be defective what is the probability that this car is produced by the company B.

Q3) Take 30 slips of paper and label 5 each–4 and 4, four each – 3 and 3, three each 2 and 2 and each-1, 0 and 1, if each slip of the paper has the same probability of being drown find the probabilities of getting –4, –3, –2, –1, 0, 1, 2, 3, 4 and find the mean and variance of this distribution of means.

Q4) The following data pertain to the number of computer jobs per day and the required CPU time required:

No. of jobs X	1	2	3	4	5
CPU time Y	2	5	4	9	10

Fit a least square line to estimate the mean CPU time and using it estimate the CPU time at x = 3.5

Q5) Measuring specimens of nylon yarn taken from two machines, it was found that 8 specimens from 1st machine had a mean denier of 9.67 with a standard deviation of 1.81 while 10 specimens from a 2nd machine had a mean denier of 7.43 with a standard deviation 1.48. Assuming the population are normal test the hypothesis H0 : $\mu1 - \mu2 = 1.5$ against H1: $\mu1 - \mu2 > 1.5$ at 0.05 level of significance?

Q6) Explain the Probability generation functions with example.

Q7) If the mean and S.D. of normal distribution are 70 and 16, find p (38) < x < 46.

Q8) Derive the formula to find the mean and variance of Binomial distribution.

Q9) Two digits are selected at random from the digits 1 through 9.

   a) If the sum is odd, what is the probability that 2 is one of the numbers selected.
   b) If 2 is one of the digits selected, what is the probability that the sum is odd 10.
       What do you mean?

(DMCA208)

ASSIGNMENT 2
M.C.A. DEGREE EXAMINATION, MAY - 2018
Second Year
PROBABILITY AND STATISTICS

Maximum Marks 30
Answer all questions

Q1) What is the probability that X will be between 75 and 78 if a random sample of size 100 taken from an infinite population has mean 76 and variance 256?

Q2) Two dice are thrown. Let X the random variable assign to each point (a, b) in S the maximum of its numbers. Find the distribution, the mean and variance of the distribution.

Q3) Fit a curve of the form $y = ax^b$ by the method of least squares for the following data:

X	1	2	3	4	5
Y	5	2	4.5	8	12.5

Q4) The performance of a computer is observed over a period of 2 years to check the claim that the probability is 0.20 that its downtime kwill exceed 5 hours in any given week. Testing the null hypothesis $P = 0.20$ against the alternate hypothesis $P \neq 0.20$, what can we conclude at the level of significance $\alpha = 0.05$, if there were only 11 weeks in which the downtime of the computer exceeded 5 hours?

Q5) What is conditional probability.

Q6) What is the objective of Uniform exponential distribution.

Q7) Define a sampling.

Q8) What are the advantages Multiple regression?

Q9) What is Mean inter-arrival time?