

(DMCA201)

ASSIGNMENT- 1
M.C.A.DEGREE EXAMINATION, DEC- 2017
(Second Year)
SOFTWARE ENGINEERING
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain RAD and Waterfall process models.
- Q2)** Write a short note on : Coupling, Cohesion, Verification, Validation.
- Q3)** Discuss design concepts of software engineering.
- Q4)** Explain Black-box testing techniques in detail.
- Q5)** Discuss the architectural design metrics and the MOOD metrics suite for design model.
- Q6)** “Debugging is an art”, discuss.
- Q7)** Explain the software quality concepts.
- Q8)** “Software does not wear out”, discuss this myth.
- Q9)** Write about DFD.

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ASSIGNMENT- 2
M.C.A.DEGREE EXAMINATION, DEC- 2017
(Second Year)
SOFTWARE ENGINEERING
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)* Explain prototyping process model.
- Q2)* Describe the software testing fundamentals.
- Q3)* Write about top-down integration testing.
- Q4)* Explain the architectural design process.
- Q5)* What is Architectural pattern?
- Q6)* What is a stub?
- Q7)* Write about ISO 9000.
- Q8)* Define stress testing.
- Q9)* What is data dictionary?

(DMCA202)

ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
PROGRAMMING WITH JAVA
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain the features of java language. What is JVM?
- Q2)** What is an Interface? Describe various forms of implementing an interface.
- Q3)** Explain types of inheritance with suitable examples for each.
- Q4)** What is an Exception? Illustrate the usage of *try* and *catch* blocks with a sample program.
- Q5)** Explain switchcase statement with an example.
- Q6)** Write java code to check whether a given string is palindrome or not.
- Q7)** What is vector? Explain how it differs from an array?
- Q8)** What is an applet? How does it differ from an application program?
- Q9)** Explain command line arguments.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
PROGRAMMING WITH JAVA
MAXIMUM MARKS-30
Answer ALL Questions

Q1 What is synchronization? How is it achieved by java?

Q2) Explain different types of exceptions.

Q3) What is a package? State its purpose.

Q4) How are priorities set for threads?

Q5) State the access specifiers used in a class.

Q6) Byte code.

Q7) Define the key word *static*.

Q8) Define Applet.

Q9) Package.

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
(Paper - III) : COMPUTER NETWORKING
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain in detail the OSI Reference Model with neat diagram.
- Q2)** Explain and differentiate between Symmetric and Asymmetric key cryptography.
- Q3)** Explain in detail the Unicast routing protocols in network layer.
- Q4)** Explain the different transmission media in detail.
- Q5)** Explain in detail different routing techniques.
- Q6)** Write about LAN and MAN.
- Q7)** Write about the components of data communication.
- Q8)** Write about the services of routing.
- Q9)** Define topology and explain it's types.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
(Paper - III) : COMPUTER NETWORKING
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)* Write a short note on IP.
- Q2)* Write a short note on HTTP.
- Q3)* Write about 'Message Confidentiality'.
- Q4)* Write a short note on Hubs and bridges.
- Q5)* What is flooding?
- Q6)* Define ARP.
- Q7)* What is message switching?
- Q8)* Define router.
- Q9)* What is FTP?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
COMPUTER ALGORITHMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain different measures of algorithm efficiency. Find the efficiency of matrix multiplication.
- Q2)** Explain any 2 algorithms to compute shortest paths.
- Q3)** Compare the iterative versions of merge and quick sort algorithms for the following input data 18, 13, 12, 19, 17, 15, 14, 11.
- Q4)** Explain Hamiltonian circuit problem using back tracking.
- Q5)** Explain any 2 minimum cost spanning tree algorithms.
- Q6)** Explain the significance of O , Ω and Θ in performance of analysis of algorithms.
- Q7)** Explain Binary search algorithm and its time complexity.
- Q8)** Explain FIFO branch-and-bound algorithm for job sequencing.
- Q9)** Explain graph colouring problem.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
COMPUTER ALGORITHMS
MAXIMUM MARKS-30
Answer ALL Questions

Q1) Explain Cook's theorem.

Q2) What is CNP? Explain.

Q3) Explain Knapsack problem using dynamic programming.

Q4) Write a short note on recursive algorithms.

Q5) What is Time complexity?

Q6) What is a Digraph?

Q7) Define Back Tracking.

Q8) What is greedy method?

Q9) What is dictionary?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC- 2017
(Second Year)
DISTRIBUTED OPERATING SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** What is a Thread? What are the items associated with thread? List out the types of threads.
- Q2)** Explain 2PL protocol and Time Triggered Protocols.
- Q3)** Explain in detail process scheduling algorithm.
- Q4)** What is DSM? Explain NUMA multiprocessors in detail.
- Q5)** Explain distributed file system and caching for building distributed file system.
- Q6)** What are real-time systems? State their classifications.
- Q7)** What is NORMA? State the difference between NUMA and NORMA.
- Q8)** Differentiate between multiprocessor and multi-computer environment.
- Q9)** Differentiate between nested and distributed transaction.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC- 2017
(Second Year)
DISTRIBUTED OPERATING SYSTEMS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain the necessary conditions of a deadlock to occur in distributed operating system.
- Q2)** Explain Banker's algorithm.
- Q3)** Explain Reader and writers problem in detail.
- Q4)** Explain NFS security architecture.
- Q5)** What is fault tolerance?
- Q6)** What is Cache memory?
- Q7)** Define a process.
- Q8)** Define monitor.
- Q9)** Define fragmentation.

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
COMPUTER GRAPHICS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** Explain about CRT & LCD with neat diagrams.
- Q2)** Explain Bresenham's circle drawing algorithm.
- Q3)** Explain Cohen-Hodgeman polygon clipping algorithm.
- Q4)** Explain different types of projections and derive the transformation matrix for each of them.
- Q5)** Describe various methods for generating curves and surfaces.
- Q6)** Explain windowing and viewing.
- Q7)** Define Transformation. Explain composite transformation in detail.
- Q8)** What are Z-Buffers? Explain.
- Q9)** Differentiate between aliasing and antialiasing.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
COMPUTER GRAPHICS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)* Explain Backface detection in detail.
- Q2)* Discuss in detail the functions of display file interpreter.
- Q3)* Explain how a hidden line is eliminated in wire frame modelling?
- Q4)* Explain mid point subdivision algorithm for 3D clipping.
- Q5)* What is shearing?
- Q6)* Write about Frame Buffer.
- Q7)* What is Morphing?
- Q8)* Define Animation.
- Q9)* What is Raster-Scan display?

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ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
E-COMMERCE
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)* What is e-Commerce? Explain its advantages and disadvantages.
- Q2)* Discuss the history of e-Commerce.
- Q3)* Explain the business models for e-Commerce.
- Q4)* Explain the process of e-Payment. What are the steps involved in this system.
- Q5)* Write a short note on e-Customer Relationship Management.
- Q6)* Digital signature.
- Q7)* LAN.
- Q8)* Gateway.
- Q9)* Web browser.

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ASSIGNMENT- 2
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
E-COMMERCE
MAXIMUM MARKS-30
Answer ALL Questions

Q1) SMTP.

Q2) Electronic checks.

Q3) Remote login.

Q4) Router.

Q5) Home shopping.

Q6) Data mining.

Q7) e-Cash.

Q8) IP address.

Q9) Cyber crimes.

(DMCA 208)

ASSIGNMENT- 1
M.C.A. DEGREE EXAMINATION, DEC - 2017
(Second Year)
PROBABILITY & STATISTICS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** a) State and prove inverse theorem of probability.
b) Explain random variables.
- Q2)** The frequency function of a continuous r.v. is given by $P(x) = ke^{-|x|}$, $-\infty < x < \infty$. Prove that $k = \frac{1}{2}$. Find the mean and variance of the distribution.
- Q3)** Fit a binomial distribution for the following data and compare the theoretical frequencies with
- | | | | | | | |
|-----|---|----|----|----|----|---|
| X : | 0 | 1 | 2 | 3 | 4 | 5 |
| F : | 2 | 14 | 20 | 34 | 22 | 8 |
- Q4)** A population consists of 5 members 2,3,6,8 and 11. Consider all possible samples of size two which can be drawn with replacement from this population. Find
- The mean of the population,
 - The S.D. of the population,
 - The mean of the sampling distribution of mean.
- Q5)** The following are data on the drying time of a certain varnish and the amount of an additive the drying time.
- | | | | | | | | | | | |
|---------------------|-----|------|------|------|-----|-----|-----|-----|-----|-----|
| Amount of varnish | | | | | | | | | | |
| Additive (grams): | x : | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Drying time (hours) | y : | 12.0 | 10.5 | 10.0 | 8.0 | 7.0 | 8.0 | 7.5 | 8.5 | 9.0 |
- Fit a second degree polynomial by the method of least squares.
 - Use the result of part (a) to predict the drying time of the varnish when 6.5 grams of the additive is being used.
- Q6)** An urn contains 5 red and 10 black balls. Eight of them are placed in another urn. What is the chance that the later then contains 2 red and 6 black balls.

Q7) A variate X has the probability distribution

X :	-3	6	9
P(X = x):	1/6	1/2	1/3

Find $E(2x + 1)^2$. Write the five properties.

Q8) Write the five properties of Normal distribution.

Q9) The two regression lines are having their means and standard deviations 31.6, 38 and 3.72, 6.31 and $\rho = -0.36$. Find the two regression lines.

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PROBABILITY & STATISTICS
MAXIMUM MARKS-30
Answer ALL Questions

- Q1)** In a normal distribution, 7% of the items are under 35 and 89% are under 63. Determine the Mean and variance of the distribution.
- Q2)** Explain confidence limits for unknown mean.
- Q3)** Explain number of degrees of freedom.
- Q4)** Define Chi-square test and write its five properties.
- Q5)** State addition theorem of probability.
- Q6)** Define distribution function of random variables.
- Q7)** Explain Type – I error in sampling.
- Q8)** Explain statistical hypothesis.
- Q9)** Explain level of significance.