

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

E-COMMERCE AND DIGITAL MARKETING

Subject Code : PGCA-1921

M.Code : 90807

Date of Examination : 19-12-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions each from SECTION - B & C.

SECTION-A

1. Write short notes on:

- a) What is ISP?
- b) Discuss Hypertext Publishing.
- c) What is meant by token Based systems?
- d) Define EDI.
- e) What are customer EDI systems?
- f) Write concept of Blogging.
- g) What are Forums?
- h) Discuss content marketing strategy.
- i) Write the function of Mobile Marketing.
- j) Write about Web Analysis.

SECTION-B

2. Discuss the framework of E-commerce.
3. Define following :
 - a. Value Exchange System
 - b. Designing Electronic Payment System.
4. Discuss the legal and security issues in Electronic data Exchange Procedure?
5. Explain the role of Smart cards and credit cards in Electronic Payment System.

SECTION-C

6. Discuss the advantages of Online Marketing. What is the importance of Social Media Marketing?
7. What is need for Search Engine Optimization? Explain its analysis on various tools.
8. What is the use of keyword research and analysis? Explain keyword research tools.
9. Explain the impact of various strategies to improve the web product.

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MCA (Sem.-3)

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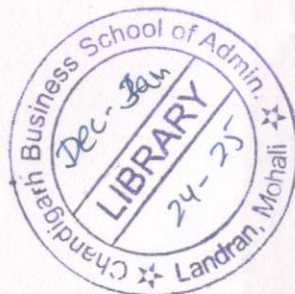
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SECTION-B

2. Discuss the framework of E-commerce.
3. Define following :
 - a. Value Exchange System
 - b. Designing Electronic Payment System.
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SECTION-C

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MCA (Sem.-3)

SOFTWARE PROJECT MANAGEMENT

Subject Code : PGCA1930

M.Code : 90801

Date of Examination : 12-12-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from each SECTION - B & C.

SECTION-A

1. Write short notes on :
 - a) Define project management process?
 - b) Write use of COCOMO2 model.
 - c) What is meant by cost benefit evaluation?
 - d) Define Capers jones rule?
 - e) What is scheduling activity?
 - f) What is Software People Management?
 - g) Discuss hazard analysis.
 - h) Discuss monte carlo simulation model.
 - i) What is organizational structure?
 - j) Write a short note on Software Reliability.

SECTION-B

2. What is cost-benefit analysis? Discuss the cost-benefit evaluation techniques.
3. **Define following :**
 - a) Requirement analysis
 - b) Hazard analysis
4. Illustrate the PERT method for identifying the critical path of project.
5. Write in brief the Types of Risk Management and managing its use in software project management.

SECTION-C

6. Write in detail the monitoring and control of software project management cycle. Discuss various collection data techniques.
7. Discuss Contract Management. What are the types of Contracts and its stages?
8. Explain different approaches for Quality Management. Give the overview of any one case study of Quality Management.
9. What is the criteria for selecting the team structure?

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MCA (Sem.-3)

THEORY OF COMPUTATION

Subject Code : PGCA1927

M.Code : 90800

Date of Examination: 5-12-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from each SECTION - B & C.

SECTION-A

- 1. Write short notes on:**
- a) Mealy machines
 - b) Yield of a tree
 - c) Left context
 - d) Transition Diagram
 - e) N DFA
 - f) Type-3 grammar
 - g) Right Derivative
 - h) Theory of Computation
 - i) LBA
 - j) Normal Forms.

SECTION-B

2. Construct a finite automata equivalent to the regular expression:

$$(0+1)^*(00+11)^*(0+1)^*$$

3. Prove that $P + PQ^*Q = a^*bQ^*$ where $P = b + aa^*b$ and Q is any regular expression.
4. Find a grammar in GNF equivalent to the grammar

$$S \rightarrow XB \mid AA \quad A \rightarrow a \mid SB \quad B \rightarrow b \quad X \rightarrow a$$

5. What is a Derivation Tree and Grammar? Explain the concept of ambiguous grammar with help of example.

SECTION-C

6. Explain the variants of Turing Machines.
7. Design PDA for $\{wcw^T \mid w = \{a,b\}^*\}$.
8. Write a note on halting problems and tractable and intractable problems.
9. Design Turing Machine of $\{0^n 1^n 2^n \mid n \geq 1\}$.

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MCA (Sem.-3)

Subject Code : PGCA1926
M. Code : 90799

M.Code : 90799

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

- SECTION-A**

- Write a brief note on backward chaining.
- List the differences between propositional logic and first order predicate logic.
- Write down the steps of A* search.
- What is pragmatic analysis in natural language processing?
- Differentiate between hard computing and soft computing.
- What is associative memory?
- Define minmax composition in fuzzy sets with the help of example.
- What is the significance of fitness function in genetic algorithm?
- Discuss some examples of activation functions used in neural networks.
- What are the various levels of artificial intelligence?

2. Define artificial intelligence. Discuss the history of artificial intelligence. Explain how 8-queens can be formulated and solved as an artificial intelligence problem?
3. Discuss the salient features of propositional logic. Consider the following facts and construct a step-by-step proof by resolution of the statement "John likes peanuts".

- SECTION-C

6. What are the requirements of soft computing? Discuss the major application areas of soft computing.
7. Write a detailed note on the architecture of backpropagation neural network. Explain the process of backpropagation learning.
8. Write short notes on :
 - a. Fuzzy decision making
 - b. Fuzzy classification.
9. Write down the steps of genetic algorithm. Discuss the operators in genetic algorithm.

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MCA (Sem.-3)

ADVANCED COMPUTER NETWORKING

Subject Code : PGCA1925

M.Code : 90798

Date of Examination : 29-11-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION -B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

- I. Write short notes on the following :**
- What are the goals of Computer Networks?
 - What is ALOHA?
 - Find the netid and hostid in 132.57.8.6 the IP address
 - What are the transmission impairments?
 - Write down four differences between UDP and TCP.
 - What is a cellular network?
 - What is the difference between hard handoff and soft handoff?
 - Give four examples of wireless communication systems.
 - List the features of Adhoc networks.
 - What is frequency reuse factor?

SECTION-B

2.
 - a) Write down the applications of Computer Networks.
 - b) What are the design issues of transport layer? Also write down the type of addresses used by the transport layer and their size.
3. What is selective repeat ARQ sliding window protocol? How it is used to manage flow control? Explain with the help of diagrams.
4. Write a detailed note on wireless transmission media.
5. Define Routing. Explain the working of Distance Vector Routing algorithm.

SECTION-C

6. What is IEEE 802.11 network? List the components of IEEE 802.11 architecture and explain the main fields included in IEEE 802.11 frame format.
7. What is an Adhoc network? List the routing protocols used in Ad-hoc networks. Also explain the working of Ad-hoc on demand distance vector routing algorithm.
8. Explain the coverage and capacity improvement techniques for cellular systems.
9. a) Describe evolution for 2.5G TDMA Standards.
b) List five issues in seamless mobility in reference to wireless networks.

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MCA (Sem.-3)

SOFTWARE PROJECT MANAGEMENT

Subject Code : PGCA1930

M.Code : 90801

Date of Examination : 20-06-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write short notes on :

- (i) What do you mean by Software Quality Assurance?
 - (ii) What do you mean by risk quantification?
 - (iii) What are milestones?
 - (iv) What is the significance of cost-benefit analysis?
 - (v) What is critical path? What is its importance?
 - (vi) Mention the important activities in the Software Project Management.
 - (vii) Define risk identification and its ranking.
 - (viii) What is risk management?
 - (ix) What are the advantages of COCOMO?
 - (x) What is Phase?
- 



SECTION-B

2. What is Project Planning? What are the major activities in Project Planning? Explain in detail.
3. Explain drawing of Gantt Chart with an example. Also, state the difference between CPM and PERT.
4. Define project. How software project differs from other projects?
5. Discuss the various risks in a project is susceptible to. How the Risk Management plans are derived and implemented?

SECTION-C

6. What are the Project Execution processes? Explain them in detail.
7. What are the steps in Project Closure? Explain in detail.
8. Explain Oldham-Hackman Job characteristic model.
9. Explain with an example how the earned value chart depicts scheduled progress, actual cost and actual progress (earned value) to allow the determination of spending, schedule and time variances?



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MCA (Sem.-3)
ADVANCED COMPUTER NETWORKING

Subject Code : PGCA1925

M.Code : 90798

Date of Examination : 12-06-2024

Time : 3 Hrs.

Max. Marks : 70

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2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION -B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

I. Write short notes on :

- a) Define Multiplexing.
- b) Discuss hamming code.
- c) Write about sliding window protocol.
- d) What is principle of congestion control?
- e) Write about FTP.
- f) Define WLAN.
- g) What is the use of IEEE 802.11?
- h) Compare Adhoc vs cellular networks.
- i) Discuss TDMA.
- j) What is Frequency reuse?

SECTION-B

2. Discuss in detail the OSI model used in Computer Networks?
3. Define following :
 - a) Transmission media
 - b) Error detection and correction codes.
4. Write the various routing algorithms used in networking.
5. Explain the addressing and flow control on transport layer.

SECTION-C

6. Discuss in detail the Wireless and Mobile Networking Technologies.
7. a) Write a note on features of Adhoc Network.
b) Give the introduction of MAC Protocols.
8. Discuss the evolution of 2G cellular networks. How it is used for wireless communication?
9. How would the coverage and capacity improvement be done in cellular systems?



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MCA (Sem.-3)
E-COMMERCE AND DIGITAL MARKETING

Subject Code : PGCA-1921

M.Code : 90807

Date of Examination : 08-06-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION-B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

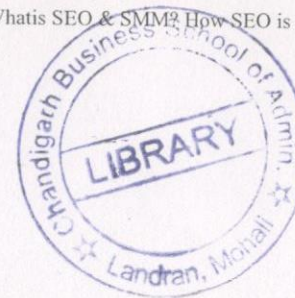
1. Write briefly:
 - i. Value exchange system
 - ii. SEO
 - iii. Google rankings
 - iv. P-O-E-M Framework
 - v. E-commerce
 - vi. Influencer marketing
 - vii. Display media
 - viii. Paid search
 - ix. Hypertext publishing
 - x. LinkedIn marketing.

SECTION-B

2. Write in detail how WWW is used as architecture and hypertext publishing?
3. **Define following :**
 - i. Electronic Fund Transfer.
 - ii. Risk in Electronic Payment System.
4. Write the various Electronic Data Interchange methods explaining their uses.
5. Explain the Legal security and privacy issues in E-Commerce.

SECTION-C

6. How can digital marketing strategy be planned to address the marketing challenges?
7. What is the digital marketing landscape? What are the skills required in digital Marketing?
8. Discuss the various content creation tools & apps. What are the challenges of content marketing?
9. What is SEO & SMM? How is SEO helping businesses to grow?



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MCA (Sem.-3)

ARTIFICIAL INTELLIGENCE & SOFT COMPUTING

Subject Code : PGCA1926

M.Code : 90799

Date of Examination : 14-06-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION-B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION-B & C and FIFTH from any section.

SECTION-A

I. Write short notes on :

- a. Define AI.
- b. What is Tic-Tac-Toe problem?
- c. What is clause in AI?
- d. Discuss Greedy Search.
- e. Write the use of Semantic Analysis.
- f. Write a short note on Supervised Learning.
- g. Define Fuzzy Logic.
- h. What are Back propagation networks?
- i. Discuss concept of optimization.
- j. What are hybrid systems?

SECTION-B

2. Discuss the concept and solution of 8-Queens problem.
3. Explain Knowledge representation. What is importance and use of propositional Logic in AI?
4. How does Hill climbing algorithm work? Write its applications.
5. Write the concept of grammars and parsing in Natural language processing.

SECTION-C

6. Explain some of the important applications of Soft Computing.
7. Discuss the use of Neural Networks. Discuss its learning rules.
8. By taking an suitable example show the Fuzzy Arithmetic and structure of Fuzzy rule based system.
9. Explain in detail about Genetic algorithms operators, methods of selection and crossover.



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MCA (Sem.-3)

THEORY OF COMPUTATION

Subject Code : PGCA 1927

M.Code : 90800

Date of Examination : 18-06-2024

Time : 3 Hrs.

Max. Marks : 70

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- SECTION - B & C. have FOUR questions each.
- Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
- Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write short notes on :

- DFA
- Moore
- Ambiguity
- Type-2 grammar
- CNF
- Left context
- Language
- Unit Productions
- PDA
- Transition Diagram.

SECTION-B

- Construct a Moore machine equivalent to the Mealy machine M defined as follows:

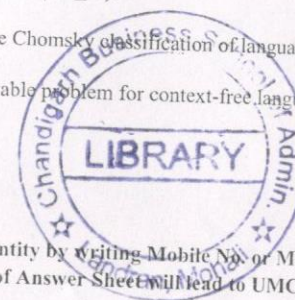
Present State	Next State			
	a = 0		a = 1	
	state	output	state	output
→q ₁	q ₁	1	q ₂	0
q ₂	q ₄	1	q ₄	1
q ₃	q ₂	1	q ₃	1
q ₄	q ₃	0	q ₁	1

- Write a note on how to minimize finite automata.
- Define regular sets and write its closure properties.
- Find a grammar in GNF equivalent to the grammar

$$E \rightarrow E + T \mid T \rightarrow T * F \mid F \rightarrow (E) \mid a.$$

SECTION-C

- Describe TM and its representations in detail.
- Design PDA for $\{a^m b^m \mid m \geq 1\}$.
- Explain in detail the Chomsky classification of languages.
- Write a note unsolvable problem for context-free languages and classifying complexity.



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