ADAMAS UNIVERSITY

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING AND TECHNOLOGY
END-SEMESTER EXAMINATION: DECEMBER 2019

(Academic Session: 2019 – 20, Semester Term: Aug 2019– Dec 2019)

Name of the Program: MCA
Stream: CSE
Semester: III

PAPER TITLE: Data Communication & Computer Network
PAPER CODE: EEC52101

Maximum Marks: 40
Time duration: 3 hours

Total No of questions: 09
Total No of Pages: 01

DO NOT SCATTER THE ANSWERS FOR DIFFERENT PARTS OF A QUESTION.

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. a) What is the function of physical layer in the OSI model?
   b) What is the number of links for a star type network having 150 nodes?
   c) What is symmetric-key cryptography?
   d) A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 1000 frames per second?
   e) Define entity authentication.

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. What do you mean by throughput of a network? A slotted ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces: (a) 1000 frames per second, (b) 500 frames per second, (c) 250 frames per second? [2+3]

3. How did TCP/IP model evolve from OSI model? Why OSI model could not be successful? [3+2]

4. Explain the role of Kerberos server in key management. [5]

5. What do you mean by CSMA? Explain how collision can be detected using CSMA/CD. [2+3]

6. Explain Stop-and-Wait ARQ protocol along with flowchart. [5]

Group C

(Answer any two questions)

$2 \times 10 = 20$

7. Differentiate between Simplest and Stop-and-Wait protocol. Explain Go-back-N ARQ. [5+5]

8. Explain the slotted ALOHA protocol with detailed flowchart. Discuss the performance limitations of pure ALOHA and how it is overcome by slotted ALOHA? [5+5]

9. Write short notes on- (a) DES algorithm (b) OSI model [5+5]

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END-SEMESTER EXAMINATION: DECEMBER 2019

(Academic Session: 2019 – 20, Semester Term: Aug 2019– Dec 2019)

Name of the Program: MCA
Stream: CSE
PAPER TITLE: English Communication
Maximum Marks: 40
Total No of questions: 10

Semester: III

PAPER CODE: HEN42111
Time duration: 3 hours
Total No of Pages: 02

(Any other information required for the student may be mentioned here)

Answer all the Groups

Group A

(Answer all the questions)

$10 \times 1 = 10$

1) Rewrite the following incorrect sentences correctly

a) This bike good but it costly.
b) I have not an iPhone I buy one yesterday.
c) We celebrates Eid for great enthusiasm.
d) The children is nestled on their bed.
e) It the night in front of Christmas.
f) The stockings was hung on the fire place.
g) I finish my homework in science.
h) He do not speak Japanese though he born in Japan.
i) Lee afraid for snakes.
j) The students was not interest in it.

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. What is the role of noise in Effective Communication?
3. Explain the role of paralanguage, facial expression and other non verbal elements in specifically formal situations.
4. Fill in the blanks with appropriate prepositions. Please copy the complete sentences.

a. He gave the presentation _____ being ill.
b. I can't drink coffee _____ sugar - it's too bitter.
c. My house is _____ the university.
d. I want to snack on something salty, _____ potato chips.
e. I got all the questions right _____ the last one.
f. Our plans will depend _____ the weather.
g. Elves flooded _____ the room.
h. There was a stack ____ story books.
i. Santa returned ____ his Sleigh.
j. He returned the sheep ___the farmer.

5. Fill in the blanks using appropriate article. Please copy the complete sentences.

a) Santa set a course for ____ North Pole.
b) It was ____ eldest son who got the property.
c) I need ____ good plan.
d) He then headed towards ____ field.
e) Garfield was ____ amazing cat.
f) He quickly played ____ trick.
g) She gave him ____ cloak.
h) The was ___ opening out there.
i) Let us stretch on ___ ground.
j) It was ____ unexpected surprise.

6. Fill in the blanks with appropriate verb forms. Please copy the complete sentences.

a) He has been___ __ a novel since October, and he is about to finish it.(write)
b) I will call you when the guests_____,(arrive)
c) Age and experience _____wisdom to man.(bring)
d) The prize was _____by our team.(win)
e) They were____ questioned.(being)
f) He was ____ to see the king. (ask)
g) She ____ straight to the palace. (march)
h) The dog _____ around. (sniff)
i) I ____ him today at my home. (expect)
j) The rabbit ____jumping along. (come)

Group C

(Answer any three questions)

$3 \times 5 = 15$

7. Write an essay on the growing trends of e-learning upon classroom learning. Mention your perspective too.

8. Write a dialogue between you and your colleague regarding the growing job scarcity in today's employment market.

9. Draft a newspaper report on the opening ceremony of the book fair.

10. There is an advertisement for the post of system engineer in TCS Mumbai. Write a cover letter for the post.

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END-SEMESTER EXAMINATION: DECEMBER 2019

(Academic Session: 2019 – 20, Semester Term: Aug 2019– Dec 2019)

Name of the Program: MCA
Semester: III

Stream: CSE

PAPER TITLE: Accounting and Management
PAPER CODE: MBA52155

Maximum Marks: 40
Time duration: 3 hours

Total No of questions: 9
Total No of Pages: 3

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. a)What is cause and effect relationship?

   b)What is efficiency and effectiveness in management?

   c)Whether management is science or art?

   d)Define gaming ratio.

   e) Write two features of bill of exchange.

Group B

(Answer any three questions)

$5 \times 3 = 15$

2.Explain the nature of management.

3. Define management. Why it is important to any organization?

4. How do you define managerialskills? How these skills vary in different managerial levels?

5. Discuss the different methods of valuation of Goodwill.

6.The Balance Sheet of Das and Dutta as on 31st March 2018 is given below:

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Capital Accounts:		Freehold premises	40000
Das	80000	Furniture	30000
Dutta	40000	Stock	35000
General reserve	48000	Debtors	60000
creditors	32000	Cash	35000
	200000		200000

Das and Dutta share profit& loss in the ratio of 3:5. They agree to admit Ghosh into the firm subject to the following terms and condition:

a) Ghosh will bring Rs.42000 of which Rs.18000will be treated as his share of goodwill.
b) Ghosh will be entitle to3/5 of share of profit of the firm.
c) A provision for bad and doubtful debt is to be created at 5% of the debtors
d) Furniture to be depreciated by 5%
e) Stock to revalue at 21000.
f) Freehold premises to be appreciated by 20%.

Prepare revaluation Account.

Group C

(Answer any two questions)

$2 \times 10 = 20$

7.Explain the primary and additional functions of management.

8.What is corporate social responsibility? Why companies need to be socially responsible?

9.From the following Trial Balance, Prepare a Trading account, Profit & Loss Account for the year ended 31stMarch, 2019 & Balance Sheet, as on the same day.

Particulars	Amount (Rs) (Dr)	Amount (Rs) (Cr)
Capital		42,500
Sales		1,19,060
Bank Overdraft		2,910
Purchase Return		1,200
Creditor		15,000
Provision for bad Debt		1,050
Cash in hand	480	
Drawings	7,100	
Plant & machinery	9,500	
Stock in trade (op)	14,600	
Purchase	1,03,620	
Sales return	2,100	
General expenses	7,000	
Wages	2,400	
Rents & debts	3,200	
Bad debt	1,720	
Debtors	30,000	
Total	**1,81,720**	**1,81,720**

Adjustments:

a) Value of the closing stock Rs.17, 300

b) Outstanding Rent Rs.800

c) Depreciation to be charged for plant & machinery @rate of 10%

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END-SEMESTER EXAMINATION: DECEMBER 2019

(Academic Session: 2019 – 20, Semester Term: Aug 2019– Dec 2019)

Name of the Program: MCA — Semester: III
Stream: CSE
PAPER TITLE: Software Engineering — PAPER CODE: ECS52103
Maximum Marks: 40 — Time duration: 3 hours
Total No of questions: — Total No of Pages:

(Any other information required for the student may be mentioned here)

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. **a)** What is meant by Integration Testing?

   b) Which software development model is equipped with mechanism to Risks assessment in every step of the software development and why?

   c) Design the equivalence class test cases for the following program:
   "A function reads a character string of size less than 5 characters, and display whether it is a palindrome or not"

   d) What is Alpha Testing?

   e) What are the properties of CMM Level 5?

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. Draw a Level-2(only) DFD for an Lemonade supply shop? 5

3. Describe Different Stages of Software project Management ?

4. Assume that the size of a software is estimated to be 42,000 lines of source code. Assume that the average salary of a software engineer be Rs. 25,000/- per month. Determine the effort required to develop the software and the minimum development time required and the amount of money required to develop the software? What is Beta Testing and Acceptance testing? 3+2=5

5. Describe different types of Coupling in correct order? What is Functional Independence and what are its advantages? 2.5+2.5=5

6. Describe about Modular and Layered Designed approach? *"Software Engineering is neither a form of science nor an art"*-Justify your answer. 3+2 =5

Group C

(Answer any two questions)

$2 \times 10 = 20$

7. What are the characteristics of a good SRS document? *Discuss Integration Testing and its approaches?* 5+5=10

8. Write a sort note on White box testing? Discuss about unit testing? What are the differences between Verification and Validation? 5+3+2=10

9. What are the activities carried out during requirement analysis and specification? What is boundary value analysis explain with example? 5+5=10

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END-SEMESTER EXAMINATION: DECEMBER 2019
(Academic Session: 2019 – 20, Semester Term: Aug 2019– Dec 2019)

Name of the Program: MCA
Stream: CSE
PAPER TITLE: Formal Language and Automata theory
Maximum Marks: 40
Total No of questions: 9

Semester: III
PAPER CODE: ECS52101
Time duration: 3 hours
Total No of Pages: 3

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. a) Give formal definition of Turing Machine.

   b) Define Chomsky Normal Form.

   c) Find out the language generated by the following grammar.
   S→0A1|1A0|0A0|1A1, A→1

   d) If G is a CFG and w is a string of length L in L(G),how long is a derivation of w in G ,if G is in Chomsky Normal Form?

   e) $\{a^n b^{2m} | n>=0, m>=0\}$ is a regular set- Justify.

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. i. Check whether the given grammar is ambiguous or not-
   $S \rightarrow SS$

   $S \rightarrow a$

   $S \rightarrow b$

   ii. Convert the following CFG into equivalent Chomsky Normal Form (CNF).
   $A \rightarrow BAB|ABA|B|\epsilon$

   $B \rightarrow 00|\epsilon$

[2.5+2.5]

3. Define Context Free Grammar. Give Context Free Grammars that generate the following language:

L1= {w| wϵ{0,1}* and w starts and ends with the same symbol}
L2= {w| wϵ{0,1}* and w contains at least two 1's} [1+2+2]

4. What is Chomsky's Hierarchy? Consider the following grammar-

$S \rightarrow aB / bA$

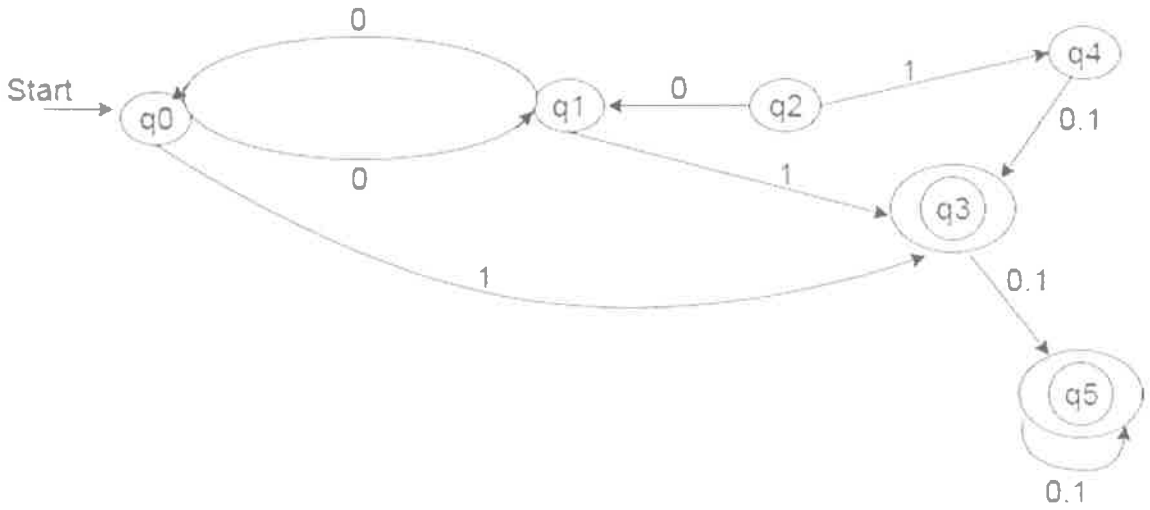
$S \rightarrow aS / bAA / a$

$B \rightarrow bS / aBB / b$

Draw parse tree for the string w = aaabbabbba. Show a leftmost and a rightmost derivation of w.

[2+3]

5. Minimize the given DFA.



Group C

(Answer any two questions)

$2 \times 10 = 20$

7. Design a Turing Machine accepting $L = \{a^i ba^j \mid 0 \leq i < j\}$. Design a Turing Machine to compute the quotient when an integer is divided by 2. [5+5]

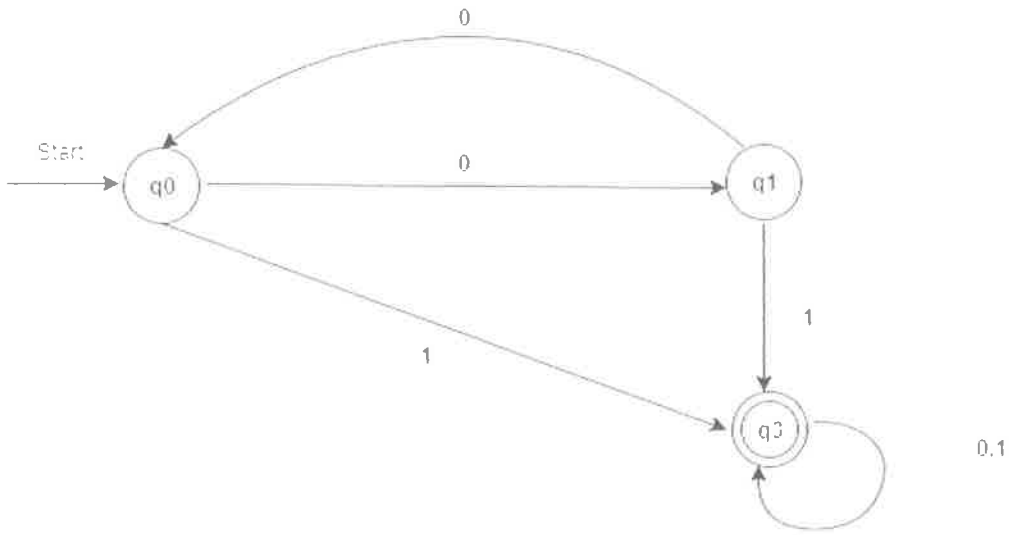
8. Define PDA. Construct a deterministic PDA for the following language:

SimplePal = $\{xcx^r \mid x \in \{a, b\}^*\}$ [3+7]

9. For the following regular expressions, draw an NFA accepting the corresponding language, so that there is a recognizable correspondence between each of the component regular-expressions and the sub-graph of the complete transition diagram.

(b + bba)*a

A finite automaton is given below. Design a Turing machine accepting the same language.



[7+3]