ADAMAS UNIVERSITY
END-SEMESTER EXAMINATION: JULY 2020

Name of the Program: B. Tech
Stream: CSE
Semester: VI

PAPER TITLE: DATABASE MANAGEMENT SYSTEMS
PAPER CODE: ECS43102

Maximum Marks: 40
Time duration: 3 Hours

Total No of questions: 08
Total No of Pages: 01

Instruction to the Candidate:

1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam.
2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. **a)** Full form of DDL is _____
b) Full form of DML is _____
c) In DBMS, ACID properties denotes _____
d) Full form of RBAC is _____
e) In Database Security, CIA denotes _____

GROUP –B
(**Short Answer Type Questions**)
Answer *any three* of the following $3 \times 5 = 15$

2. Explain Data Abstraction with suitable example.
3. Define Entity Relationship Model with suitable example.
4. Explain Access Control in DBMS with suitable exmple.
5. Discuss ACID properties in details.

GROUP –C
(**Long Answer Type Questions**)
Answer *any two* of the following $2 \times 10 = 20$

6. Explain Open Hashing Chaining, Closed Hashing Linear Probing and Quadratic Probing using respective Hash Function and Key Space.
7. Draw an Entity Relationship Diagram for Patient Management System containing at least the following entities: Hospital, Patient, Health_Unit,Doctor, Disease. Please select the parameters and relationship of these entities as per your logical concept.
8. Explain Inner Join, Left Outer Join, Right Outer Join and Full Outer Join with suitable examples.

_____

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING AND TECHNOLOGY
END-SEMESTER EXAMINATION: JULY 2020

Name of the Program: B. Tech
Stream: CSE
PAPER TITLE: Software Engineering
Maximum Marks: 40
Total No of questions: 8

Semester: VI

PAPER CODE: ECS43104
Time duration: 3 hours
Total No of Pages: 03

Instruction for the Candidate:

1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam.
2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1.

a) What are the types of requirements?

b) Is Use-case actor always a person having a role that different people may play?

c) What is objective of RAD ?

d) How many numbers of phases a RAD Model has?

e) Why SDLC standard is chosen suggest your answer?

GROUP –B

(**Short Answer Type Questions**)

Answer *any three* of the following $3 \times 5 = 15$

2. What are the differences between alpha testing and Beta testing? Let us consider the following C program:

```
main()
{
        int a,b,c,avg;
        scanf("%d %d %d",&a,&b,&c);
        avg=(a+b+c)/3;
        printf("avg= %d",avg);
}
```

i. Make a list of unique operators in the above code. (2)

ii. Make a list of unique operands in the above code. (2)

iii. Estimate the length and volume of the program. (1)

3. What do you understand by inheritance and method overloading in the context of object- orientation? (3)

Give an example of inheritance using any object-oriented programming language of your choice. (2)

4. The following table indicates the various tasks involved in completing a software project, the corresponding activities, and the estimated effort for each task in person-months.

Notation	Activity	Effort in person-months
T_1	Requirements specification	1
T_2	Design	2
T_3	Code actuator interface module	2
T_4	Code sensor interface module	5
T_5	Code user interface part	3
T_6	Code control processing part	1
T_7	Integrate and test	6
T_8	Write user manual	3

The precedence relation $Ti \leq \{Tj, Tk\}$ implies that the task Ti must complete before either task Tj or Tk can start. The following precedence relation is known to hold among different tasks: $T1 \leq T2 \leq \{T3, T4, T5, T6\} \leq T7$.

(a) Draw the Activity network representation of the tasks. (3)

(b) Determine ES, EF and LS, LF for every task. (2)

Or

Describe about Prototype Model of software development. (5)

5. By using suitable examples explain the following terms associated with an abstract data type (ADT)—data abstraction, data structure, data type. (5)

Or

Explain the basic steps of Scrum project development with a suitable real life example? (5)

GROUP –C
(**Long Answer Type Questions**)

Answer *any two* of the following $\mathbf{2 \times 10 = 20}$

6. i. What is the difference between the functional and the non-functional requirements of a system? (4)
ii. Identify at least two functional requirements of a bank automated teller machine (ATM) system. (4)
iii. Also identify one non-functional requirement for an ATM system. (2)

7. Draw a class diagram using the UML syntax to represent the fact that the book register of a library contains details of the all the books in the library. The details for each book include its title, author, ISBN number, price, date of procurement, price, and date of last loan, person to whom loaned. A book can either be a reference or issue type book. The reference books are to be referred inside the library and cannot be loaned out, whereas issue books can be taken on loan by a member. The member register contains the details of all members of the library. The details that are maintained for a member include member name, address, telephone number, date of joining library and books outstanding. Each library member can take on loan at most five issue books.

8. i. Describe the testing activities with a suitable diagram. (5)
ii.What is Driver and Stub module using a suitable diagram. (5)

ADAMAS UNIVERSITY
END-SEMESTER EXAMINATION: JULY 2020

Name of the Program: B. Tech
Stream: CSE
PAPER TITLE: Artificial Intelligence
Maximum Marks: 40
Total No of questions: 09

Semester: VI

PAPER CODE: ECS43106
Time duration: 3 Hours
Total No of Pages: 02

Instruction to the Candidate:

1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam.
2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

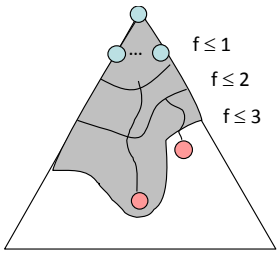
1.

a) Explain total pay-off in zero sum game with a simple example.
b) What are the characteristics in general game?
c) What are strategies and responses used by MAX in adversarial search?
d) What is the construct of MAKE-ACTION-SENTENCE in KB agent?
e) How many variables are involved in Unary constraint? Give an example?

GROUP –B
(Short Answer Type Questions)

Answer *any three* of the following $3 \times 5 = 15$

2. Explain the optimality of the A^* algorithm using the following figure. f is estimated total cost of path.



3. "A variable in a Constraint Satisfaction Problem (CSP) is arc-consistent if every value in its domain satisfies the variable's binary constraints". Explain it with an example.

4. Prove each of the following statements considering g(n) = backward cost of a path, h(n) = forward cost of a path and f(n) = estimated total cost of path

i) Breadth-first search is a special case of uniform-cost search.

ii) Depth-first search is a special case of best-first tree search.

iii) Uniform-cost search is a special case of A∗ search.

5. Write the name of the algorithm in which how the following statements will be executed:
   a. MAKE-PERCEPT-SENTENCE
   b. MAKE-ACTION-QUERY
   c. MAKE-ACTION-SENTENCE

2. Explain with an example of this statement "the move to position with highest minimax value = best achievable payoff against best play in 2-ply (layer) game".

GROUP –C
(**Long Answer Type Questions**)

Answer *any two* of the following $2 \times 10 = 20$

3. Prove each of the following assertions: Consider $\alpha \models \beta$ iff in every model in which α is true, β is also true, where α and β are logical sentences

a. α is valid if and only if True $\models \alpha$.

b. $\alpha \models \beta$ if and only if the sentence$(\alpha \Rightarrow \beta)$is valid

c. $\alpha \equiv \beta$ if and only if the sentence$(\alpha \Leftrightarrow \beta)$is valid.

d. $\alpha \models \beta$ if and only if the sentence $(\alpha \wedge \neg\beta)$ is unsatisfiable.

4. Write down Minimax algorithm. Explain this algorithm with an example.

5. There are four binary logical connectives namely ¬ (not), ∧ (and), ∨ (or) and ⇒ (implies). Answer the following questions:

   a. Are there any others that might be useful?

   b. How many binary connectives can there be?

   c. Why are some of them not very useful?

ADAMAS UNIVERSITY
END-SEMESTER EXAMINATION: JULY 2020

Name of the Program: B. Tech/MCA — Semester: VI/IV
Stream: CSE
PAPER TITLE: ELECTIVE-II (Cryptography and Cyber Security) — PAPER CODE: ECS43110
Maximum Marks: 40 — Time duration: 3 Hours
Total No of questions: 08 — Total No of Pages: 02

Instruction to the Candidate:

1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam.
2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. **a)** What is the difference between Tunnel mode and Transport mode?
b) When Padding is required in MD5?
c) Which malware is used in disguise in cyber attack?
d) Why in Hill Cipher Key matrix has to be invertible?
e) Why RSA uses large prime number?

GROUP –B

Answer *any three* of the following $3 \times 5 = 15$

2. Classify all type of cryptographic scheme. Compare Cryptography, Cryptology, Cryptanalysis, Steganography in your own words. Explain about different techniques of Steganography. [2+1+2]
3. Explain about the trusted third party authentication service in details. [5]
4. Explain about different types of devices which are used to implement VPN. [5]
5. Compare (both similarities and difference) between different Spoofing attacks in details. [5]

GROUP –C
(Long Answer Type Questions)

Answer *any two* of the following $2 \times 10 = 20$

6. a) Find the value of $7^{1000} \bmod 23$.
b) Find the value of $7^{547} \bmod 825$ using Modular exp.
c) Find the last two digit of 121^{562}. [3+4+3]
7. Find the value of X which leaves a remainder of 3, 2, 1 and 4 when divided by 5, 7, 9 and 11 respectively. [10]
8. The plaintext is
21
24
19

And key is

$$\begin{matrix} 6 & 5 & 1 \\ 3 & 2 & 3 \\ 4 & 3 & 2 \end{matrix}$$

Perform Hill cipher encryption and decryption.
[10]

ADAMAS UNIVERSITY
School of Engineering and Technology
END-TERM EXAMINATION (July 2020)
Department of CSE/ME/ECE/EE
B. Tech
3rd Year
Semester – VI

Maximum Marks: 40 **Times:** 3 Hours
Name of Paper: Management I **Paper Code:** MBA43144
Total No. of Questions: 14 **Total No. of Pages:** 1

Section A

Write Short Notes on the followings: **5 x 2 Marks = 10 Marks**

1. Management 2. Directing 3. Efficiency
4. Forecasting 5. Six Sigma

Section B

Answer any Five **5 x 4 Marks = 20 Marks**

6. What do you mean by Planning? Discuss in brief different types of plans.
7. Explain the concept of Management by Objectives (MBO).
8. What do you mean by Control? Discuss in brief the control process.
9. Explain the concept of Total Quality Management.
10. What do you mean by Material Management? Discuss in brief the objectives of Material Management.
11. Discuss in brief the motivation theory of X and Y.
12. From the below information calculate Re-Order Level, Minimum Level and Minimum Level:

	A	**B**
Maximum Consumption per week (in units)	250	250
Average Consumption per week (in Units)	175	175
Minimum Consumption per week (in units)	100	100
Re-order period in weeks	8 to 12	4 to 8
Re-order qty (in units)	300	500

Section C

Answer any One **1 x 10 Marks = 10 marks**

13. What do you mean by Scientific Management? Discuss the principles of Scientific Management. Also discuss in brief the different experiments conducted by the initial authors in this school of thoughts.

14. Describe the concept of Industrial Management. Also discuss the importance and problems of Industrial Management.