Enrollment No. 120280106081

G. H. PATEL COLLEGE OF ENGINEERING & TECHNOLOGY
(CONSTITUENT INSTITUTION OF CVMU)
BE – SEMESTER - 5 INTERNAL EXAMINATION – SEPTEMBER 2022
102045601 Design and Analysis of Algorithms

Date: 16th September, 2022 **Time: 11:15 AM to 12:30 PM** **Maximum Marks: 40**

Instructions:

1. Figures on the right indicate full marks.
2. Make the suitable assumption if required, do specify the same.

Q. 1 **(A) Answer the following questions.** **[08]**

(i) Define Time Complexity.

(ii) Arrange following growth rates in ascending order. (^ indicates power & assume base of log is 2).
1. Θ(nlogn) 2. Θ(1) 3. Θ(n*n*n) 4. Θ(4 ^ logn) 5. Θ(logn)

(iii) What is an Algorithm?

(iv) What is the time complexity of binary search algorithm in worst case?

(v) Can we solve 0/1 Knapsack problem optimally using Greedy algorithm?

(vi) Bellman ford is all pair shortest path algorithm (True / False).

(vii) What is principle of optimality?

(viii) Define Big 'Oh' Notation.

Q. 2 (A) Solve the following recurrence relation T(n) = T(n/10) + T(9n/10) + n. **[05]**

(B) Write an algorithm for Merge sort. **[05]**

(C) What is recurrence? Derive recurrence equation for Tower of Hanoi and solve it using suitable method. **[06]**

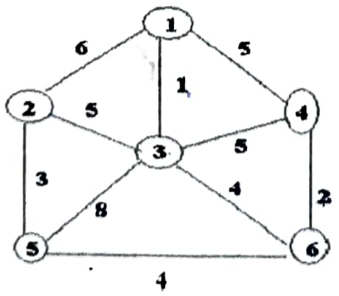
OR

(C) Analyze Quick sort algorithm for worst case portioning. **[06]**

Q. 3 (A) Solve Making Change problem using Dynamic Programming. (Denominations: d1=1, d2=4, d3=6). Give your answer for making change of Rs. 8. **[05]**

(B) Solve the following Knapsack problem using Greedy method. Number of items = 5, knapsack capacity W = 100, weight vector = {50, 40, 30, 20, 10} and profit vector = {1, 2, 3, 4, 5}. **[05]**

(C) Compute MST using Kruskal's algorithm. **[06]**



OR

(C) Give the difference between: **[06]**
1. Dynamic Programming & Greedy algorithm
2. Dynamic Programming & Divide and Conquer.

*** * * * * * * * ALL THE BEST * * * * * * * ***

Enrollment No. 120280501058

CVM UNIVERSITY
BE(IT/CP)
MID SEMESTER EXAMINATION –
102044503– Artificial Intelligence
AY:2022-23 ; Term :Odd ; Semester : V

Date: 19th September, 2022 **Time: 11:15 AM to 12:30 PM** **Maximum Marks: 40**

Instructions:

1. Figures on the right indicate full marks.
2. Make the suitable assumption if required, do specify the same.

Q. 1 (A) What do you mean by Knowledge Representation? List out different approaches to the knowledge representation. **[2]**

(B) What do you mean by Artificial Intelligence? List one advantage and one disadvantage of Artificial Intelligence. Explain any one of the applications of Artificial Intelligence. **[3]**

(C) What is production system? Discuss any two characteristics of Production system. **[3]**

OR

(C) What do you mean by Linear and Non-linear Planning? Name one technique to generate each of these two types of planning. **[3]**

Q. 2 (A) What do you mean by informed and un-informed search? Explain AO* algorithm as informed search and Depth limited search as un-informed search. **[06]**

(B) Give the state space representation of 8-puzzle problem. **[06]**
Discuss any one heuristic to apply A* algorithm to solve 8-puzzle problem.
Explain any of the three problem characteristics for 8-puzzle problem.

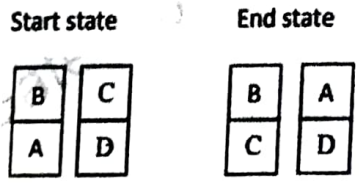
(C) Solve the following Cryptarithmetic problem applying constraint satisfaction approach. **[04]**

W A S H + Y O U R = H A N D S

OR

(C) What is hill climbing search strategy? **[04]**
Explain three limitations of Hill climbing algorithm with its solution.

Q. 3 (A) What is Goal Stack Planning? **[05]**
Solve the given Blocks World problem using Goal Stack Planning showing content of stack at each step. Generate and show the final plan to solve the given problem.

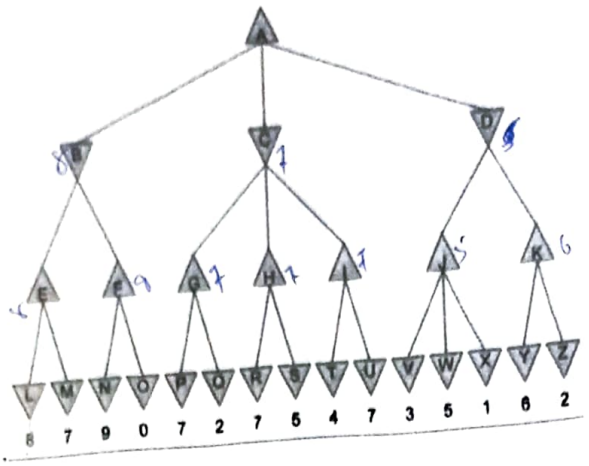


OR

(A) Explain each of the five components of Planning system. **[05]**

(B) Show the path to be followed by node A to win the game in the given game-tree, with all the static scores from the first player's point of view, using Min-Max algorithm. Also apply Alpha-Beta pruning algorithm to check which nodes will get pruned. Generate entire game tree to show the working of Min-Max algorithm. Also show the entire game tree, with cut-offs, after applying Alpha-Beta pruning **[05]**

PTO



(C) Represent the following facts of the knowledge base using Propositional logic. **[06]**

I. If I read till late night, then I do have an exam next day and I have fear of the exam.

II. I do not have fear of the exam if I discuss with my friends or I do not read till late night.

III. I do not see movies with my friends if and only if either reviews of the movie is not good or I do have an exam next day.

IV. We go for dinner and do not read till late night, If I see movies with my friends.

V. If I do not see movies with my friends and I read till late night implies I do have an exam next day and it is external exam.

VI. I do not discuss with my friends if I do not have an exam next day but I do have fear of the exam.

*** * * * * * * * ALL THE BEST * * * * * * * ***

Enrollment No. 12022080101051

GCET/ADIT/MBIT
(CONSTITUENT INSTITUTION OF CVMU)
BE – SEMESTER - 5 INTERNAL EXAMINATION – SEPTEMBER 2022
102045602: Software Engineering

Date: 14/9/2022 **Time: 11:15 to 12:30** **Maximum Marks: 40**

Instructions:

1. Figures on the right indicate full marks.
2. Make the suitable assumption if required, do specify the same.

Q. 1 (A) **Answer the Following. (Each question carries one mark).** **[08]**

(i) Define Software Engineering.

(ii) List out stages of Unified Phase modeling.

(iii) Software myth **"I have developed my code now I am not concern about other".** Justify

(iv) Justify importance of Project and Process Matrix in software engineering.

(v) Define SRS and its requirement in software development.

(vi) Which model is appropriate when project risk is very high & requirements are not clear?

(vii) Define Backlog and Sprint.

(viii) What is the role of UML diagram in software engineering?

Q. 2 (A) Illustrate the Layered Architecture of software engineering with a neat sketch. **[05]** 5

(B) What is Agility? List out Agile process models and explain any one model in detail with diagram. **[05]** 3

(C) Describe Generic Framework Activity with detail diagram. **[06]** 3

OR

(C) Explain RMMM in detail. **[06]**

Q. 3 (A) Explain Requirement Engineering Process. **[05]** 2

(B) Explain Project Scheduling and Tracking with suitable example. **[05]** 3

(C) Draw the Class diagram of Library Management System. **[06]**

OR

(C) 1) Draw a USE CASE diagram for ATM Management System.
2) Draw Activity diagram for Facebook Login System. **[06]** 2

* * * * * * * * ALL THE BEST * * * * * * * *

Enrollment No. 12002050104

G. H. PATEL COLLEGE OF ENGINEERING & TECHNOLOGY
(CONSTITUENT INSTITUTION OF CVMU)
BE - SEMESTER - 5 INTERNAL EXAMINATION - SEPTEMBER 2022
102044505 - Web Development

Date: 17/09/2022 **Time: 11:15 AM to 12:30 PM** **Maximum Marks: 40**

Instructions:

1. Figures on the right indicate full marks.
2. Make the suitable assumption if required, do specify the same.

Q. 1 **(A) Answer the Following. (Each question carries one mark).** **[08]**

(i) What is HTTP? Discuss its request message format.

(ii) List out any four website design issues.

(iii) Difference between GET and POST methods.

(iv) What is the use of meta tag? Give its example.

(v) What is class selector in CSS?

(vi) Explain the following CSS properties with example:
1. z-index 2. display

(vii) List out various uses of JavaScript.

(viii) Explain following keywords:
1. var 2. let

Q. 2 (A) Explain CSS box model with example. **[05]**

(B) Write HTML code to design the student registration form having following inputs: Name, address, gender, branch (select from various branches), hobbies (allow to select multiple options) and email **[05]**

(C) Write HTML and JavaScript code to validate the following inputs: **[06]**
1. Mobile number which must start with either 9, 8 or 7 and exactly of 10 digits.
2. Password which must begin with letter either small or capital and then followed by anything, end with digit and length between 7 to 15 characters.

OR

(C) Write HTML and JavaScript code to find the factorial of a given number. Ask user to enter integer number and display the result on the same page. **[06]**

Q. 3 (A) What are the different ways to add style sheets in the web page? Explain them using example. **[05]**

(B) Write HTML, CSS and JavaScript code to do the following. **[05]**
1. When button-1 is clicked then it will change the background color of paragraph-1.
2. When button-2 is clicked then it will change the case of paragraph-2 to upper case.

(C) What is position property in CSS? Explain any three types of positioning with example. **[06]**

OR

(C) Explain popup boxes in JavaScript with example. **[06]**

* * * * * * * * **ALL THE BEST** * * * * * * * *

Enrollment No. 12002020104051

G H PATEL COLLEGE OF ENGINEERING & TECHNOLOGY
(CONSTITUENT INSTITUTION OF CVMU)

BE – SEMESTER - 5 **INTERNAL EXAMINATION** **September 2022**

Subject: 102044504 – Programming with Python

Date: 15th September 2022 **Time: 11.15 AM – 12.30 PM** **Maximum Marks: 40**

Instructions:

1. Figures on the right indicate full marks.
2. Make the suitable assumption if required, do specify the same.

Q. 1 (A) **Answer the Following. (Each question carries one mark).** **[08]**

(i) Explain __init__() Function.

(ii) What does the following code print?

```
from functools import reduce
numbers = [5, 10, 15, 20]
sum = reduce(lambda x, y: x + y, numbers)
print(sum)
```

(iii) What is Abstract class?

(iv) Which function overloads the == operator?

(v) What is the difference between extend() and append() methods of list?

(vi) What will be the output of the following code snippet?

```
a = [10, 20, 30]
a = tuple(a)
a[0] = 5
print(a)
```

(vii) What will be the output of the following code snippet?

```
example = ["Sunday", "Monday", "Tuesday", "Wednesday"]
print(example[-3:-1])
```

(viii) List out any 2 methods of math module.

Q. 2 (A) Consider a list consisting the marks of python subject of 10 students. Use reduce and lambda function to calculate the average of marks from the list. **[05]**

(B) Define types of Inheritance and explain each with examples. **[05]**

(C) 1) Give the syntax and significance of string functions: title() and strip(). **[03]**

2) How to create thread by extending Thread class? **[03]**

OR

(C) 1) Explain Identity operators and membership operators. **[03]**

2) Write difference between method overloading and method overriding. **[03]**

Q. 3 (A) Write a python program to create class named Student with three attributes id, name and marks. Implement necessary getters and setters. Instantiate 2 objects of that class and show different method calls using them. **[05]**

(B) Explain private, protected and public access modifiers with the help of example. **[05]**

(C) Create a dictionary where keys are name of students and values are another dictionary containing semester, age and cpi of that student. **[06]**

- Print all the names of students.
- Print the name of student having highest CPI

OR

(C) What is the difference between Syntax error and Run time error? Explain exception handling in python with example. **[06]**

* * * * * * * **ALL THE BEST** * * * * * * *

Seat No. _____ Enrolment No. 12000805501081.

THE CHARUTAR VIDYA MANDAL UNIVERSITY

B.E./B.TECH. – SEMESTER 5

NOVEMBER 2022 (REGULAR) EXAMINATION

Course Title: Design and Analysis of Algorithms

Course Code: 102045601

Total Printed Pages: 2

Date: 18/11/2022 **Time: 10:00 am to 12:30 pm** **Maximum Marks: 60**

Instructions:

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumption if required, do specify the same.

Q: 1 **(A) Answer the Following. (Each question carries one marks).** [10]

(i) Define 'Theta' Notation.

(ii) What is space complexity?

(iii) State principal of optimality.

(iv) What is the worst-case time complexity of quick sort?

(v) What is the best-case running time to find the median of a 2-sorted array after merging it?

(vi) Define an algorithm.

(vii) State recurrence equation for Tower of Hanoi.

(viii) Find the worst-case complexity for the following algorithm.

```
x=1;
for (i=0; i < n; i++)
{
    for (j=0; j < n*n; j++)
    {       if(j = = n/2)  break;   }
}
```

(ix) Define NP-Complete problem.

(x) Define NP-Hard problem.

Q: 2 **(A)** Explain Binary Search with time complexity analysis. [04]

(B) Solve the following recurrence equations: [06]

(1) $T(n) = 2T(n/2) + n\log_2 n$

(2) $T(n) = 2\ T(n-1) + 1$

Q: 3 (A) Suppose there are 5 jobs to execute, each of which takes unit time. A Job i earns profit g_i if and only if it is executed before its deadline d_i. Apply Job Scheduling algorithm to find optimum schedule. [05]

i	1	2	3	4	5
g_i	20	15	10	5	1
d_i	2	2	1	3	3

(B) Explain Heap Sort with a suitable example. [05]

OR

(B) Write an algorithm for sorting a given array in ascending order using Merge Sort. [05]

Q: 4 (A) Give the difference between Greedy and Dynamic techniques. [05]

(B) Explain Prim's algorithm with a suitable example and state the time complexity. [05]

OR

(B) Explain DFS algorithm with a suitable example. [05]

Q: 5 (A) Given four matrices $A_{1\ (5X4)}$, $A_{2\ (4X6)}$, $A_{3\ (6X2)}$ and $A_{4\ (2X7)}$. Find the optimal sequences for the computation of multiplication operation. [05]

(B) Solve the following knapsack problem with 4 items using Dynamic Programming method. The capacity of knapsack is 8. Values of items are v1=15, v2=10, v3=9, v4=5 and weights are w1=1, w2=5, w3=3, w4=4. What is the maximum value in a knapsack? Mention numeric value of V [4.8] in short answer text. [05]

OR

(B) Explain the Assignment problem using Branch and Bound. [05]

Q: 6 (A) Compute Longest Common Subsequence for the below strings. [05]

S1: b a c b f f c b

S2: d a b e a b f b c

(B) Explain n-queen problem in detail. [05]

OR

(B) Explain Rabin-Karp algorithm with a suitable example. [05]

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Seat No: 526071 Enrollment No: 170280.501084

THE CHARUTAR VIDYA MANDAL UNIVERSITY

B.E./B.TECH. – SEMESTER 5

NOVEMBER 2022 (REGULAR) EXAMINATION

Course Title: WEB DEVELOPMENT

Course Code: 102044505

Total Printed Pages: 02

Date: 21/11/2022 **Time: 10.00 am to 12.30 pm** **Maximum Marks: 60**

Instructions:

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumption if required, do specify the same.

Q: 1 **(A) Answer the Following. (Each question carries one marks).** [10]

(i) What is the use of HTTP protocol?

(ii) Explain the following CSS properties:
1. text-transform 2. opacity

(iii) What are the differences between var and let keywords for variable declaration in JavaScript?

(iv) Explain any one Superglobal variable in PHP.

(v) Explain JSON with example.

(vi) What is difference between cellspacing and cellpadding in HTML table?

(vii) What are the semantic elements in HTML?

(viii) List out any four issues for an effective website design.

(ix) What is RESTFul API?

(x) What are the different types of lists available in HTML?

Q: 2 **(A)** Explain various ways to add JavaScript code in the web page. [04]

(B) What is selector in CSS? Explain different types of selectors. [06]

Q: 3 **(A)** What is Box Model in CSS? Explain it in detail. [05]

(B) Write an HTML and JavaScript code which accepts N as input and displays first N Fibonacci numbers as list. [05]

OR

(B) What are the events in HTML? Explain keyboard and mouse events with example. [05]

Q: 4 **(A)** Explain any five input elements in HTML with example. [05]

(B) What is Cookie? How can we handle cookies in PHP? [05]

OR

(B) Write HTML and CSS code to display the elements as follows on the web page. **[05]**

1. Display two paragraphs where one is having yellow text color and another is having blue text color.
2. Display the div element with red background color at 200 px from left and 200 px from top.

Q: 5 **(A)** What are the different types of arrays in PHP? Explain them with example. 3 **[05]**

(B) What is jQuery? Explain it with suitable example. 2 **[05]**

OR

(B) What is session management? Write a simple HTML and PHP application to demonstrate the use of session. **[05]**

Q: 6 **(A)** Write HTML and PHP code to retrieve the student details and display them in the tabular form from the server when enrolment number is entered in textbox and submit button is clicked. Assume that database and table (columns like enrolment_number, name, branch, dob, city and cpi) are already created in MySQL database. 1 **[05]**

(B) What is AJAX? Explain it with suitable example. 1 **[05]**

OR

(B) Write HTML and PHP code to upload the specific type of file (.jpg only) on the server in the specific folder. **[05]**

****

Seat No.

Enrollment No. 12002[illegible]

THE CHARUTAR VIDYA MANDAL UNIVERSITY

B.E./B.TECH. – SEMESTER 5

NOVEMBER 2022 REGULAR EXAMINATION

Course Title: Programming with Python

Course Code: 102044504

Total Printed Pages: 02

Date: 16/ 11/ 2022 **Time: 10.00 am to 12:30 pm** **Maximum Marks: 60**

Instructions:

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumption if required, do specify the same.

Q: 1 (A) Answer the Following. (Each question carries one marks). **[10]**

(i) How can we create an empty list in python?

(ii) Give the output of following Python code:

```
myStr = 'CVMU is the best University'
print myStr [15 : : 1]
print myStr [-10 : -1 : 2]
```

(iii) What does the function re.match() do?

(a) matches a pattern at any position in the string
(b) such a function does not exist
(c) matches a pattern at the start of the string
(d) none of the mentioned

(iv) What type of data is: arr = [(1,1), (2,2), (3,3)]?

(a) Array of tuples
(b) Tuples of lists
(c) List of tuples
(d) Invalid type

(v) Which statement is correct?

(a) List is immutable && Tuple is mutable
(b) List is mutable && Tuple is immutable
(c) Both are Mutable.
(d) Both are Immutable

(vi) Which character stand for Starts with in regular expression?

(a) &
(b) ^
(c) $
(d) #

(vii) Explain method overloading in python.

(viii) In list, the append() method is used to add multiple items at the end of a list.

(a) True
(b) False

(ix) Explain init() function.

(x) Explain string function title() with example.

Q: 2 (A) What is a dictionary in Python? Explain any three built-in dictionary methods with example. [04] 3

(B) Explain map, reduce and filter functions with syntax and example. [06] 2

Q: 3 (A) Explain Identity operators and membership operators with example. [05] 1

(B) Write a Python program to generate list of fibonacci series upto n numbers. [05] 2

OR

(B) Write a Python Program to Find the Number Occurring Odd Number of Times using Lambda expression and reduce function. [05]

Q: 4 (A) What is Setter and Getter in Python? Explain with example. [05] 3

(B) Explain any two widgets of Tkinter in python with example. [05] 3

OR

(B) Write a python program to append data to an existing file 'python.py'. Read data to be appended from the user. Then display the contents of entire file. [05]

Q: 5 (A) How to create a thread in python? Explain it with an example. [05] 3

(B) Create a class student with following member attributes: roll no, name, age and total marks. Create suitable methods for reading and printing member variables. Write a python program to overload '==' operator to print the details of students having same marks. [05]

OR

(B) Declare a class Person having name as member. Derive two classes [05] 3
a. Businessman - having income and number of people involved in his business as members.
b. Employee - having income as a member.
c. Create objects of both the classes and compare the income and print the name of one having greater income.

Q: 6 (A) What is the difference between error and exception? Explain exception handling in python with example. [05] 4

(B) Write a program to find whether an email id entered by user is valid or not. [05] 3

OR

(B) Discuss the SQL commands used for creating and dropping a database with example. [05]

Seat No. 71 Enrollment No. 12022080501081

THE CHARUTAR VIDYA MANDAL UNIVERSITY

B.E./B.TECH. – SEMESTER V

November 2022 (REGULAR) EXAMINATION

Course Title: ARTIFICIAL INTELLIGENCE

Course Code: 102044503

Total Printed Pages : 03

Date: 23/11/2022 **Time: 10.00 am to 12.30 pm** **Maximum Marks: 60**

Instructions:

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumption if required, do specify the same.

Q: 1 (A) Answer the Following. (Each question carries one marks). **[10]**

(i) What do you mean by a state in state-space search?

(ii) State one advantage and one disadvantage of depth limited search.

(iii)

i)	Breadth First Search	a) Informed Search
ii)	Best First Search	b) Uninformed Search

Which of the following is correct match?

a) i-a ; ii-a
b) i-a ; ii-b
c) i-b ; ii-b
d) i-b ; ii-a

(iv) What problem may arise while solving blocks world problem using Goal stack planning, that can be solved using constraint posting?

(v) List down any of the 3 applications of Natural Language Processing.

(vi) Explain any one of the applications of Artificial Intelligence.

(vii) Name any two logical programming languages used in Artificial Intelligence.

(viii) Name two reasoning methods for Knowledge representation.

(ix) Give any one of the representations of a state for solving Water jug problem through state space representation.

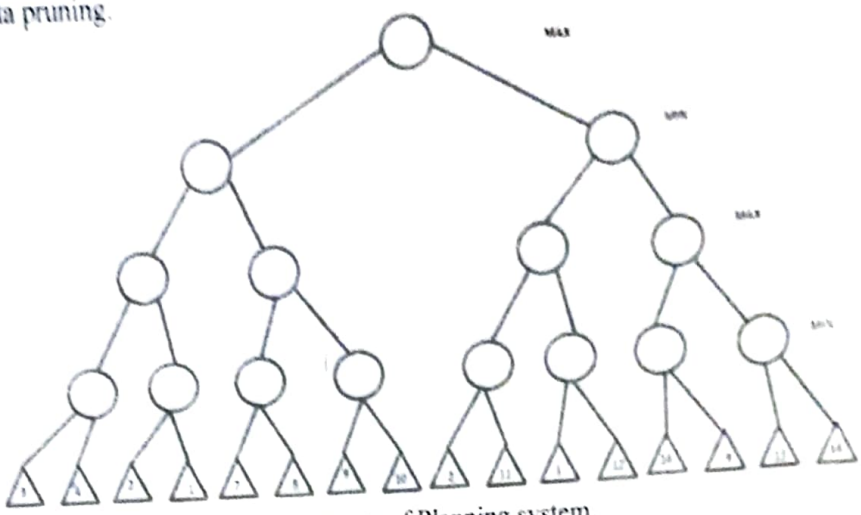
(x) Define any one of the real world applications of Genetic algorithm.

Q: 2 (A) Discuss any one application that can be defined efficiently using Prolog. **[04]**
Name three sections of Prolog programming work space.
Write a Prolog program to count number of elements in a list.

(B) Define Hill Climbing search technique. **[06]**
Discuss all three problems of Hill climbing search with its solution.
Is hill climbing an informed search technique?

Q: 3 (A) Show the path to be followed by root node to win the game in the given game-tree, with all the static scores from the first player's point of view, using Min-Max algorithm. Also apply Alpha-Beta pruning algorithm to check which nodes will **[05]**

get pruned. Generate entire game tree to show the working of Min-Max algorithm. Also show the entire game tree, with cut-offs, after applying Alpha-Beta pruning.



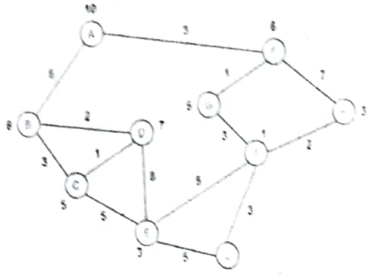
[05]

(B) Explain each of the five components of Planning system.

OR

[05]

(B) Consider the following graph.



The numbers written on edges represent the distance between the nodes.
The numbers written on nodes represent the heuristic value.
Find the most cost-effective path to reach from start state A to final state J using A* Algorithm.

Q: 4 **(A)** What is Natural Language Processing? Explain the steps in Natural Language Processing. [05]

(B) Solve following crypt-arithmetic problem applying constraint satisfaction approach. [05]

```
  CROSS
+ ROADS
---------
 DANGER
```

OR

(B) Solve the 4-queen problem using state space representation. Show the entire state space tree including a path from initial state to goal state. Define an appropriate function to represent the constraint of 4-queen problem. **[05]**

Q: 5 **(A)** Explain Fuzzy logic system architecture. **[05]**

(B) Consider the following facts: **[05]**

I. All cell phone rings in the morning.
II. Anyone who has any laptop will not have any desktop.
III. Kids does not have anything that rings in the morning.
IV. John has either a mobile or a laptop.

Prove that If John is a kid, then John does not have any desktop using Backward chaining.

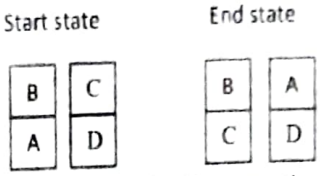
OR

(B) Consider the following facts: [05]

I. All cell phone rings in the morning.
II. Anyone who has any laptop will not have any desktop.
III. Kids does not have anything that rings in the morning.
IV. John has either a mobile or a laptop.

Prove that If John is a kid, then John does not have any desktop using resolution.

Q: 6 (A) Solve the given Blocks World problem using Goal Stack Planning showing content of stack at each step. Generate and show the final plan to solve the given problem. [05]



(B) Explain Genetic Algorithm in brief. Discuss three operators of Genetic Algorithm. List out one advantage and one disadvantage of using Genetic algorithm to solve a problem. [05]

OR

(B) Represent the following facts of the knowledge base using Predicate logic. [05]

I. Every student who loves reading is happy.
II. Not all the students hate both reading and writing.
III. Students try to read the textbooks of only those subjects for which they have not prepared notes.
IV. For all subjects S, if there exists a student T who has highest attendance in the subject, then there must exist a student P who has lowest attendance in that subject S.
V. For each student, either that individual has his/her mobile, or there exists some friend from whom he/she can borrow it.

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Seat No: 41 Enrollment No. 12022080501021

THE CHARUTAR VIDYA MANDAL UNIVERSITY

B.E./B.TECH. – SEMESTER V

NOVEMBER 2022 (REGULAR) EXAMINATION

Course Title: Software Engineering

Course Code: 102045602

Total Printed Pages: 02

Date: 14/11/2022 **Time: 10.00 am to 12.30 pm** **Maximum Marks: 60**

Instructions:

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumption if required, do specify the same.

Q: 1 **(A) Answer the Following. (Each question carries one marks).** **[10]**

(i) Justify why feasibility study is important for requirement gathering.

(ii) Differentiate Functional Oriented and Object-Oriented Design.

(iii) Define the terms of 4 Ps in software engineering.

(iv) List out the Project Tracking methods.

(v) Define SRS and its requirement

(vi) State any 2 difference between white box and black box testing.

(vii) List 5 functional requirement of CVMU online fees paying system.

(viii) What is Cyclomatic Complexity?

(ix) List out Quality Standards.

(x) Justify reason of transition from traditional software engineering to Dev Ops?

Q: 2 **(A)** Explain Software configuration management with neat diagram. **[04]**

(B) Draw SDLC diagram and explain each phase in detail. **[06]**

Q: 3 **(A)** List out and discuss Software matrix used or cost estimation with example. **[05]**

(B) What is Requirement engineering? Explain the Requirement engineering process tasks. **[05]**

OR

(B) Define Task and Task set. Define task list for Engineering admission process and schedule using Gantt chart. (Assume start date / end date/ milestone etc requirement) **[05]**

Q: 4 **(A)** Explain the different types of Coupling that might exist between two software modules. What problems are likely to arise if two modules have high coupling? **[05]**

(B) What is Architectural Design? Explain any two architectural styles of software. **[05]**

OR

(B) Distinguish between: [05]

i. Verification and Validation

ii. Alpha Testing and Beta Testing

Q: 5 (A) Explain Agile Development in detail. Explain XP process model with neat sketch [05]

(B) Explain Analysis & Design Model with neat diagram. [05]

OR

(B) List and explain SQA activities in brief. [05]

Q: 6 (A) Write short note on Six Sigma & Write name of two companies follows Six sigma standard. [05]

(B) Explain 7 C's of DevOps Lifecycle for Business Agility. [05]

OR

(B) List out any 5 functional & non-functional requirements of online shopping portal & Draw Class Diagram of shopping cart of online shopping system. [05]

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