

**Jaypee University of Engineering & Technology, Guna****T-2 (Odd Semester 2023)****18B11HS312- TECHNIQUES FOR DECISION MAKING**

Maximum Duration: 1 Hour 30 Minutes

Maximum Marks: 25

Notes:

1. This question paper has 5 questions.
2. Write relevant answers only.
3. Do not write anything on question paper.
4. Use of calculator is permitted.

- Q1. Using the solution procedure for a mixed strategy game, solve the game given below.

Marks [5] CO  
No. CO2

	Player B	
Player A	5	2
	3	4

Also determine the optimal strategies for each player and find the value of the game.

- Q2. ABC Corporation is considering 3 options for managing its data processing operations: continue with its own staff, hire an outsider vendor to do the managing (outsourcing), or use a combination of its own staff and an outsider vendor. The profit generated from the operations depends on future demand. The profit (in thousand \$) of each option is expressed in the following payoff table:

[5] CO3

Decision Alternatives	States of Nature			
	Very High Demand	High Demand	Moderate Demand	Low Demand
Own staff	52	36	29	15
Outsider vendor	27	12	14	26
Combination	45	17	35	20
Probability	0.2	0.2	0.5	0.1

Make a decision based on the following criteria and complete the table given below:

Criteria	Decision	Payoff
Minimax Regret		
Expected Value		

- Q3. Mention any three differences between decision making under risk and decision making under uncertainty in a suitable tabular form.

[2+3] CO3

A restaurant needs to decide how many containers of juice to order each week to meet the

demand on the basis of the information given below:

Four States of Nature (Demand for Juice Containers): 15, 16, 17, 18

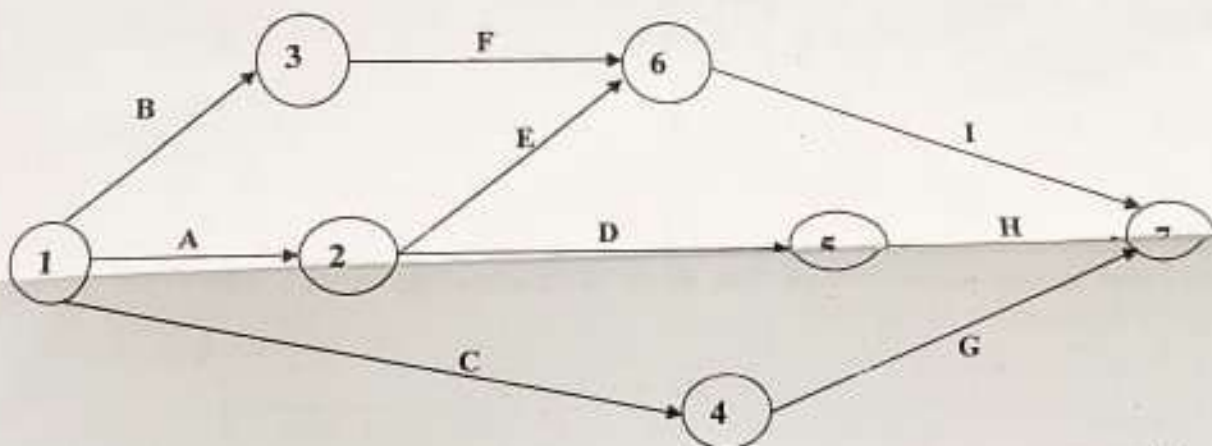
Four Decision Alternatives (Ordering Juice Containers): 15, 16, 17, 18

Each juice container costs \$10 and sells for \$12. Unsold juice containers are sold to a local farmer for \$2 per container. If there is a shortage, the restaurant estimates the cost of customer ill-will and lost profit to be \$4 per container. Construct a payoff table for this decision situation.

- Q4. A project is represented by the network diagram as shown below and has the following data as shown in the table:

[5] CO4

Activity	A	B	C	D	E	F	G	H	I
Optimistic time (in days)	4	5	8	3	4	8	8	1	3
Most likely time (in days)	6	7	11	6	7	9	12	4	5
Pessimistic time (in days)	8	9	14	9	10	16	16	7	7



Compute expected time for each activity. List all the paths along with their duration. Find the critical path and project completion time.

- Q5. The project manager of Pinnacle Software Corporation wants to prepare a project network. His assistant has collected the following information for the software project.

[5] CO4

Activity	A	B	C	D	E	F	G	H	I
Immediate Predecessor(s)	--	A	A	A	B	B,C	E	E,F	D,F
Duration (in days)	18	16	18	20	17	19	18	27	23

Draw a neat and clean network diagram. List all the paths along with their duration. Find the critical path and project completion time.