X

Unit 2 - Week 1

Assignment 1

The due date for submitting this assignment has passed. **Due on 2018-08-22, 23:59 IST.**
As per our records you have not submitted this assignment.

1) The sub-problems in a dynamic programming problem are called: ***1 point***

- i. states
- ii. slabs
- iii. phases
- iv. stages

No, the answer is incorrect.
Score: 0

Accepted Answers:
iv. stages

2) Alternatives available at every stage of a dynamic programming problem are called: ***1 point***

- i. states
- ii. slabs
- iii. decision variables
- iv. decision criteria

No, the answer is incorrect.
Score: 0

Accepted Answers:
iii. decision variables

3) We are solving a Stagecoach problem using Backward Dynamic Programming. Stage 1 involves run from Starting city to next set of cities. Stage 4 involves run from the last but one set of cities to the destination city. We have: ***1 point***

- i. Stage 4 optimal decisions independent of other stage optimal decisions
- ii. Stage 4 optimal decisions dependent of other stage optimal decisions
- iii. Stage 4 optimal decisions cannot be calculated first
- iv. None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
i. Stage 4 optimal decisions independent of other stage optimal decisions

4) We are solving a Stagecoach problem using Backward Dynamic Programming. Stage 1 involves run from Starting city to next set of cities. Stage 4 involves run from the last but one set of cities to the destination city. We have: ***1 point***

- i. Stage 1 optimal decisions independent of other stage optimal decisions
- ii. Stage 1 optimal decisions do not exist
- iii. Stage 1 optimal decisions cannot be calculated first
- iv. None of the above

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- i. initial state need not be considered
- ii. optimal policy not dependent on initial decisions
- iii. optimal policy not dependent on remaining decisions
- iv. optimal policy dependent on initial as well as remaining decisions

No, the answer is incorrect.
Score: 0

Accepted Answers:
iv. optimal policy dependent on initial as well as remaining decisions

6) Optimal policy for stage n is related to the optimal policy for stage n+1. This relationship is known as: ***1 point***

- i. optimal relationship
- ii. recursive relationship
- iii. Bellman's relationship
- iv. none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
ii. recursive relationship

7) There are 19 match sticks and there are two players in a game. Each player must pick 1, 2, or 3 match sticks in his/her turn.The game continues in this manner until the last match stick is picked up. The player who picks up the last match is the loser. It is now first player's turn. How many match sticks should the first player pick in the first turn to be sure of winning the game? ***1 point***

- i. 1
- ii. 2
- iii. 3

No, the answer is incorrect.
Score: 0

Accepted Answers:
ii. 2

8) ***1 point***

A company has Rs. 3 Lakh to invest (in multiples of Rs. 1 Lakh) in three projects as given in t table below:

Investment (in Lakh)	Return from Project (in Lakh)		
	Project-1	Project-2	Project-3
0	0	0	0
1	30	15	40
2	45	30	50
3	55	40	52

Backward Dynamic programming is made use of to solve the Investment problem. The numbe of stages in the problem will be:

- i. 1
- ii. 2
- iii. 3
- iv. 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
iii. 3

9) Refer Question 8. Number of decision options in each stage will be: ***1 point***

- i. 1
- ii. 2
- iii. 3

iv. 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
iv. 4

10)Refer Question 8. Solve it by Dynamic Programming. The value of total optimal pay-off will be: ***1 point***

i. 85 Lakh
ii. 80 Lakh
iii. 90 Lakh
iv. 70 Lakh

No, the answer is incorrect.
Score: 0

Accepted Answers:
i. 85 Lakh

11)Refer Question 8. Solve it by Dynamic Programming. How many optimal investment options are there that will have the total optimal pay-off? ***1 point***

i. 1
ii. 2
iii. 3
iv. 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
ii. 2

12)Refer Question 8. Solve it by Dynamic Programming. Which one of the following is an optimal solution? ***1 point***

i. Project 1 = 2 Lakh; Project 2 = 1Lakh; Project 3 = 0Lakh
ii. Project 1 = 1Lakh; Project 2 = 2Lakh; Project 3 = 0Lakh
iii. Project 1 = 0Lakh; Project 2 = 1Lakh; Project 3 = 2Lakh
iv. Project 1 = 1 Lakh; Project 2 = 1 Lakh; Project 3 = 1 Lakh

No, the answer is incorrect.
Score: 0

Accepted Answers:
iv. Project 1 = 1 Lakh; Project 2 = 1 Lakh; Project 3 = 1 Lakh

13) ***1 point***

There are 6 cities in a country. All the cities are not linked to one another by road. Distances km are indicated in the table below where there are road links. '-' indicates that there is interconnectivity between the cities.

	A	B	C	D	E	F	G
A	-	2	3	5	-	-	-
B	-	-	-	-	3	4	-
C	-	-	-	-	4	2	-
D	-	-	-	-	6	8	-
E	-	-	-	-	-	-	6
F	-	-	-	-	-	-	4
G	-	-	-	-	-	-	-

How many ways Destination City G can be reached from the Starting City A?

i. 3
ii. 6
iii. 12
iv. 18

No, the answer is incorrect.
Score: 0

Accepted Answers:
ii. 6

14)Refer Question 13. We intend to find the shortest distance from the Strating City A to the Destination City G by Backward Dynamic Programming. How many stages should we consider? ***1 point***

- i. 1
- ii. 2
- iii. 3
- iv. 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
iii. 3

15)Refer Question 13. We intend to find the shortest distance from the Strating City A to the Destination City G by Backward Dynamic Programming. What will be correct 2^{nd} stage of the problem? ***1 point***

- i. B, C, D to E, F
- ii. A to B, C, D
- iii. E, F to G
- iv. B, C, D to G

No, the answer is incorrect.
Score: 0

Accepted Answers:
i. B, C, D to E, F

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