

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MTech
BRANCH: CSE

SEMESTER : II
SESSION : SP/2023

SUBJECT: CS512 ARTIFICIAL INTELLIGENCE

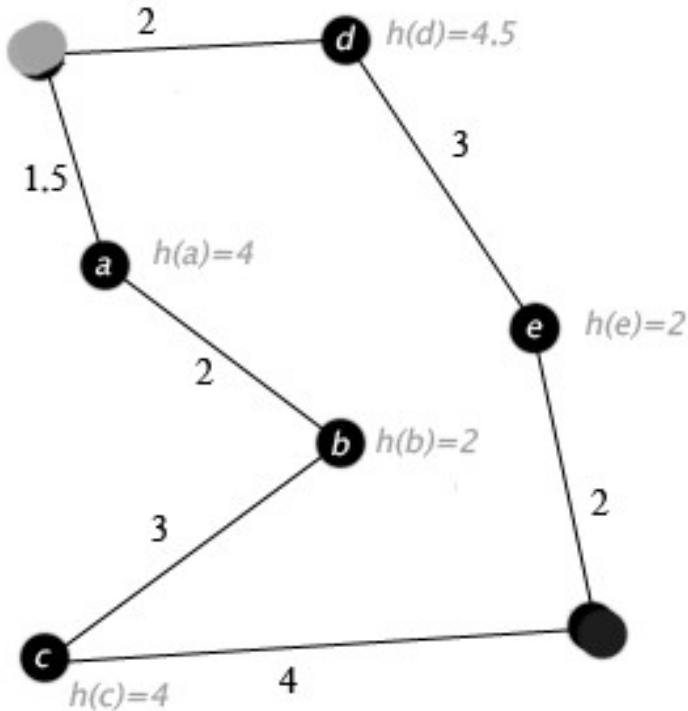
TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|--|-----|-------------|
| Q.1(a) | Show relationship between Artificial Intelligence, machine learning and deep learning in detail. | [5] | [CO1] [BT2] |
| Q.1(b) | Define PEAS for online book store. | [5] | [CO1] [BT4] |
| Q.2(a) | Explain working of A* algorithm and apply on given graph. | [5] | [CO3] [BT3] |



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| Q.2(b) | Apply genetic algorithm to solve TSP problem. | [5] | [CO4] [BT5] |
| Q.3(a) | Write given sentences in predicate logic.
a. Tom is an instance of dog.
b. Tom caught a cat
c. Tom is owned by roshan.
d. Tom is brown in colour.
e. Dogs like bones.
f. The dog sat on the mat.
g. A dog is a mammal.
h. A cat is an instance animal
i. All mammals are animals.
j. Mammals have fur. | [5] | [CO3] [BT4] |

Q.3(b) Describe semantic net and Frame with help of example. [5] [CO1] [BT3]

Q.4(a) Apply Naïve bayes classifier on given data [5] [CO4] [BT4]

Document	Text	Class
1	I loved the movie	+
2	I hated the movie	-
3	a great movie. good movie	+
4	poor acting	-
5	great acting. a good movie	+

Q.4(b) Explain following in context of neural learning. [2+1+2] [CO2] [BT4]
(i) Convolution
(ii) Hidden layers
(iii) Activation function

Q.5(a) Differentiate between NLP and NLU. Describe applications of both and its brief functioning. [5] [CO5] [BT3]

Q.5(b) Describe different components of robots and their functions. [5] [CO5] [BT3]

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