

POKHARA ENGINEERING COLLEGE INTERNAL ASSESSMENT

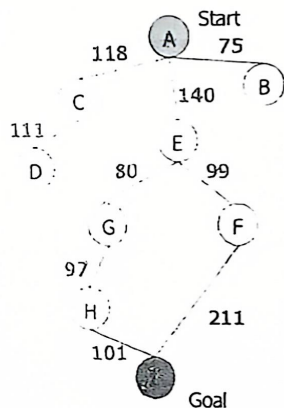
Level: Bachelor Semester – Fall Year : 2025
Programme: B.E. Full Marks: 100
Course: Artificial Intelligence (V Sem) Time : 3 hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

- 1 a What is ethics in AI? Explain about the ethical implications of AI? 8
- b Define Intelligent agent. Differentiate between Model Based Reflex agent and Goal based agent with necessary examples. 7
- 2 a Solve the following cryptographic problem: 7
$$\begin{array}{r} \text{CROSS} \\ + \text{ROADS} \\ \hline \text{DANGER} \end{array}$$
- b What is informed and uninformed search? How DLS overcomes the limitations of DFS, explain with appropriate diagram. 8
- 3 a Calculate the path cost using greedy first search and A* search. 8



State	Heuristic: h(n)
A	366
B	374
C	329
D	244
E	253
F	178
G	193
H	98
I	0

- b Why do we need backpropagation algorithm? Explain its working principle with necessary diagrams. 7
- 4 a Define Genetic Algorithm. Explain the operators in Genetic Algorithms. 8
- b Given the following statistics, what is the probability that a woman has cancer id she has a positive mammogram result? 7
 - i. One percent of women over 50 have breast cancer.
 - ii. Ninety percent of women who have breast cancer test positive on mammograms.
 - iii. Eight percent of women will have false positives.
- 5 a What is Expert system. Explain case Based Reasoning with necessary diagram. 8
- b Tom is cat. Tom caught bird. Tom is owned by John. Tom is ginger in color. Cats like cream. The cat sat on the mat. A cat is a mammal. A bird is an animal. All mammals are animals. Mammal have fur. Draw a semantic graph. 7
- 6 a Represent the following statements into predicate logic: 8
 - i. Some boys play cricket.
 - ii. Not all students like both Mathematics and Science
 - iii. Every apple is either green or yellow.
 - iv. If an apple is green then it is tasty.
- b What is fuzzy logic? Explain the architecture of fuzzy logic system. 7
- 7 Write short notes on: (Any Two): 5x2=10
 - a. Alpha Beta Pruning
 - b. SVM
 - c. Fuzzy Inference System

The End