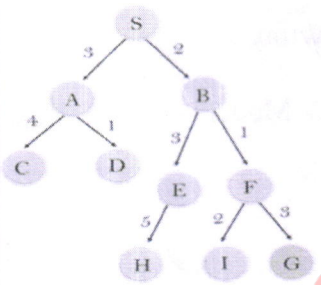
(2 ½ Hours) **[Total Marks: 75]**

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 **Attempt ANY FOUR from the following:** **(20M)**

(a) What is the role of PEAS factors in AI Agent? Mention it for Part picking robot and for playing Soccer Match.
(b) Describe Goal based agent with example.
(c) What is AI? State it's one application.
(d) Explain following task environments with example.
  i. Episodic vs. Sequential
  ii. Deterministic vs. Stochastic
(e) State & Explain Breadth First Search Algorithm of Uninformed Search.
(f) Consider the following graph. Let the starting node be A and the goal node be G.



node	H (n)
A	12
B	4
C	7
D	3
E	8
F	2
H	4
I	9
S	13
G	0

Find the path using Greedy Best First Search Algorithm.

Q. 2 **Attempt ANY FOUR from the following:** **(20M)**

(a) Explain Single-layer feed forward neural networks
(b) Write a short note on the AI Knowledge cycle.
(c) Differentiate between Linear Regression & Logistic Regression.
(d) Explain the architecture of the Fuzzy Logic System.
(e) Write short note on Support Vector Machine.
(f) Describe the Ensemble learning in brief.

Q. 3 **Attempt ANY FOUR from the following:** **(20M)**

(a) Explain the concept of Reinforcement Learning.
(b) Explain Q- Learning in detail.
(c) Write in short about Naive Bayes models
(d) Explain the concept of Unsupervised Learning. Give one example.
(e) Write a short note on the Hidden Markov Model.

muquestionpapers.com

Y080V1A8EE3Y080V1A8EE3Y080V1A8EE3Y080V1A8EE3

(f) Consider the database given below.

Transaction ID	Items
T1	Samosa, Chole, Biryani, Gulab Jamun
T2	Samosa, Biryani, Chole, Masala Chai
T3	Samosa, Masala Chai, Jalebi
T4	Masala Chai, Biryani, Jalebi
T5	Jalebi, Chole, Gulab Jamun, Masala Chai
T6	Biryani, Masala Chai, Samosa

Calculate:

i) Support (Chole)
ii) Support (Samosa, Chole)
iii) Confidence (Masala Chai ⇒ Jalebi)
iv) Confidence (Samosa ⇒ Biryani)
v) Lift (Chole, Gulab Jamun)

Q. 4 Attempt <u>ANY FIVE</u> from the following: **(15M)**

(a) Write a short note on Thinking Humanly and Acting Humanly approaches of AI.
(b) Write states, Initial States, Actions, Transition Model and Goal test to formulate 8 Queens problem.
(c) Write a short note on Underfitting.
(d) What is propositional Logic in AI?
(e) Write a short note on statistical learning.
(f) What are hidden variables or Latent Variables?

****

muquestionpapers.com

Y080Y1A8FF3Y080Y1A8FF3Y080Y1A8FF3Y080Y1A8FF3