**Q1**: Scientists grouped over four types for defining the Artificial Intelligent, what are these four schools?

**Q2**: what are the abilities that a machine should has during doing the Turing Test?

**Q3**: What are the three fundamental functionalities of an Agent?

**Q4**: what are the main differences between the fully and partially observable?

**Q5**: what is the main difference between the model-based agent and simple reflex agent?

**Q6**: The figure shows a searching scenario for a problem that a search problem agent wants to solve it. The agent uses the **BFS** technique to find solutions. Answer the following questions through building the tabulating search

1. Build the search table?
2. Dose the search has completeness or not? Why?
3. What is the path between the initial state (A) and the goal (G)?
4. What is the time complexity for the search if each action takes 2 ms?
5. What is the space complexity if each node needs 3Mb memory?
6. Can you discuss the optimality for this search? Why?

**Q7**: Which school definition is more situ a problem if we need to work as logic?

**Q8**: What are the three fundamental functionalities of an Agent?

**Q9**: agents are classifying into three types based on the environment observability, what are they?

**Q10**: Which of the agent’s structure needs to have some memory about the previous actions?

**Q11**: Which of the following cases could be considered as a fully observation environment?

1. An agent has 50% knowledge about the environment.
2. An agent can see only important details of the environment.
3. An agent saves all details of the environment.
4. There is no fully observable agent.

**Q12**: An agent that does not use previous data and has no goal is ……………………………………………... agent.

Q13: Use the following ANN to show one iteration of Feedforward Backpropagation process.



Given that:

Initial weights are: w11=0.4, w12=0.1, w21= -0.1, w22= -0.1, w13=0.06 and w23 = -0.4

in1 = 1 and in2=1. The desired output = 1

Goal should be less than 0.01

Activate function = $\frac{1}{1+e^{-x}}$

$β=Learning rate=0.45$

$$α=Momentum term=0.9$$