**SAMPLE QUESTION BANK**

**Program: BE (Mechanical Engineering)**

Curriculum Scheme: **Rev2019 C Scheme**

**Course: AUTOMATION AND ARTIFICIAL INTELLIGENCE and Course Code: MEC604**

**MCQ- SAMPLE SET**

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| 1. | 1. \_\_\_\_\_\_ is not the Intelligent Agent in AI |
| Option A: | Human agent |
| Option B: | Robotic agent |
| Option C: | Software agent |
| Option D: | Exoscopic agent |
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| 2. | 1. AI stands for\_\_\_\_\_\_\_ |
| Option A: | Artificial Intelligence |
| Option B: | Aerial Intelligence |
| Option C: | Artificial Imaging |
| Option D: | Artificial Interpritation |
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| 3. | \_\_\_\_\_\_\_ is not the type of automation. |
| Option A: | Fixed Automation |
| Option B: | Programmable Automation |
| Option C: | Flexible Automation |
| Option D: | Independent Automation |
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| 4. | \_\_\_\_\_\_\_\_ level of automation is highest level of automation |
| Option A: | Enterprise |
| Option B: | Plant |
| Option C: | Cell |
| Option D: | Machine |
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| 5. | \_\_\_\_\_\_ is not the part of Hydraulic System. |
| Option A: | Compressor |
| Option B: | Pump |
| Option C: | Motor |
| Option D: | Oil Sump |
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| 6. | \_\_\_\_\_\_ is not the part of Pneumatic System. |
| Option A: | Oil Sump |
| Option B: | Air Compressor |
| Option C: | DCV |
| Option D: | Actuator |
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| 7. | In 5/2 DCV, 5 number indicates\_\_\_\_\_ |
| Option A: | Number of ports |
| Option B: | Number of positions |
| Option C: | Number of pins |
| Option D: | Number of freedoms |
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| 8. | DCV stands for\_\_\_\_\_\_\_ |
| Option A: | Direction control valve |
| Option B: | Double convention valve |
| Option C: | Double core valve |
| Option D: | Dual core valve |
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| 9. | Initial & final position of piston rod is identified by\_\_\_\_\_ |
| Option A: | Push button |
| Option B: | DCV |
| Option C: | Hose pipes |
| Option D: | Limit Switch |
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| 10. | \_\_\_\_\_\_ is not a type of push button |
| Option A: | Normally open (NO) type |
| Option B: | Normally closed (NC) type |
| Option C: | Change over (CO) type |
| Option D: | Regenerative type |
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| 11. | Solenoid valve woks by means of \_\_\_\_\_\_ |
| Option A: | Solenoid coils |
| Option B: | Simple switch coils |
| Option C: | Sole Coils |
| Option D: | Secondary coils |
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| 12. | Which configuration can be used for Spot Welding purpose? |
| Option A: | Cartesian |
| Option B: | Polar |
| Option C: | Cylindrical |
| Option D: | Spherical |
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| 13. | Polar configuration robot has minimum \_\_\_ no. of axis. |
| Option A: | 2 |
| Option B: | 3 |
| Option C: | 4 |
| Option D: | 5 |
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| 14. | SCARA robot is mainly used for \_\_\_\_\_\_\_ application. |
| Option A: | Assembly |
| Option B: | Spray Painting |
| Option C: | Pick and place |
| Option D: | Welding |
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| 15. | Work envelope depends upon \_\_\_\_ . |
| Option A: | Number of Joints |
| Option B: | Type of joints |
| Option C: | Degree of freedom |
| Option D: | Material of the Manipulator |
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| 16. | Control resolution depends upon \_\_\_\_ |
| Option A: | Number of Joints |
| Option B: | Type of Joints |
| Option C: | Type of movement |
| Option D: | Range of Movements |
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| 17. | Electric drive is preferred over Pneumatic and Hydraulic because of \_\_\_ . |
| Option A: | Less expensive |
| Option B: | Self-lubrication and cooling |
| Option C: | Positioning accuracy |
| Option D: | High strength |
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| 18. | Kid exploring new things is an example of |
| Option A: | Supervised Learning |
| Option B: | Unsupervised Learning |
| Option C: | Reinforcement Learning |
| Option D: | Heuristic Learning |
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| 19. | Forecasting risks is an example of |
| Option A: | Unsupervised learning |
| Option B: | Supervised learning |
| Option C: | Reinforcement learning |
| Option D: | Heuristic learning |
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| 20. | Logistic regression is used when you want to\_\_\_\_\_\_\_\_\_ |
| Option A: | Predict a dichotomous variable from continuous or dichotomous variables. |
| Option B: | Predict a continuous variable from dichotomous variables. |
| Option C: | Predict any categorical variable from several other categorical variables. |
| Option D: | Predict a continuous variable from dichotomous or continuous variables. |
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| 21. | Logistic regression assumes a\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Option A: | Linear relationship between continuous predictor variables and the outcome variable. |
| Option B: | Linear relationship between continuous predictor variables and the logit of the outcome variable. |
| Option C: | Linear relationship between continuous predictor variables. |
| Option D: | Linear relationship between observations |
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| 22. | How many types of Artificial Neural Networks? |
| Option A: | 2 |
| Option B: | 3 |
| Option C: | 4 |
| Option D: | 5 |
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| 23. | In which ANN, loops are allowed? |
| Option A: | Feed Forward ANN |
| Option B: | Feed Back ANN |
| Option C: | Open Loop ANN |
| Option D: | Closed Loop |
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| 24. | Neural Networks are complex \_\_\_\_\_\_\_\_\_\_\_\_\_\_ with many parameters. |
| Option A: | Linear Functions |
| Option B: | Nonlinear Functions |
| Option C: | Discrete Functions |
| Option D: | Exponential Functions |
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| 25. | Which of the following is not the promise of artificial neural network? |
| Option A: | It can explain result |
| Option B: | It can survive the failure of some nodes |
| Option C: | It has inherent parallelism |
| Option D: | It can handle noise |
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| 26. | The output at each node is called\_\_\_\_\_. |
| Option A: | node value |
| Option B: | Weight |
| Option C: | neurons |
| Option D: | axons |
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| 27. | What is full form of ANNs? |
| Option A: | Artificial Neural Node |
| Option B: | AI Neural Networks |
| Option C: | Artificial Neural Networks |
| Option D: | Artificial Neural numbers |
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| 28. | Which of the following is not an Machine Learning strategies in ANNs? |
| Option A: | Unsupervised Learning |
| Option B: | Reinforcement Learning |
| Option C: | Supreme Learning |
| Option D: | Supervised Learning |
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| 29. | Which of the following is an Applications of Neural Networks? |
| Option A: | Automotive |
| Option B: | Aerospace |
| Option C: | Electronics |
| Option D: | Foundary |
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| 30. | What is perceptron? |
| Option A: | a single layer feed-forward neural network with pre-processing |
| Option B: | an auto-associative neural network |
| Option C: | a double layer auto-associative neural network |
| Option D: | a neural network that contains feedback |
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**Descriptive Questions- SAMPLE SET**

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| Q1. | Explain the concept of Automation in short & explain its elements. |
| Q2. | Explain various levels of Automation. |
| Q3. | Explain various types of intelligent agents. |
| Q4. | Draw & Explain Cascade method for pneumatic Circuit in short. |
| Q5. | Draw & Explain bleed off circuit in short . |
| Q6. | Draw & Explain regenerative circuit in short . |
| Q7. | Draw & Explain sequencing circuit in short . |
| Q8. | Draw and explain electro pneumatic circuit diagram for A+B+A-B- |
| Q9. | Explain concept and applications of PLC in short. |
| Q10. | Explain ladder logic in PLC programming. |
| Q11. | Give classification of Robot in short. |
| Q12. | Explain selection criteria for Robot. |
| Q13. | Explain continuous path control in short. |
| Q14. | Explain tree and graph search. |
| Q15. | Explain depth first search algorithm in short. |
| Q16. | Differentiate between Uninformed and Informed search algorithm. |
| Q17. | State & explain K Means Clustering algorithm in detail. |
| Q18. | Explain Linear regression in detail with applications. |
| Q19. | Explain automation principles and strategies in detail. |
| Q20. | Draw & Explain Cascade method for pneumatic Circuit along with its significance in detail. |
| Q21. | Draw and explain meter in and meter out circuit along with its significance in detail |
| Q22. | Explain the concept of counter balance valve with appropriate circuit diagram. |
| Q23. | Draw & Explain the electro pneumatic circuits for direct & Indirect control of automatic return of a double acting cylinder ( double solenoid). |
| Q24. | Two double acting pneumatic cylinders A & B are selected for industrial application. Design PLC system to achieve the given output as per the following sequence specified (A+B+) ( A-B-) |
| Q25. | Explain Supervised, Unsupervised and Reinforcement Learning with applications and examples in detail. |
| Q26. | State & explain K Means Clustering algorithm in detail. |
| Q27. | Explain linear and logistic regression in detail. |