**Question 1 (20 marks)**

1. Define Artificial intelligence. (2 marks)
2. Define Knowledge Representation as used in artificial intelligence. (2 marks)
3. Explain 3 methodologies of Knowledge Representation in artificial intelligence. (6 marks)
4. Explain the meaning of below terms:
   1. Natural Language Processing (2 marks)
   2. Deductive Reasoning (2 marks)
   3. Machine Learning (2 marks)
5. Describe 4 disadvantages of Robots in their application. (4 marks)

**Question 2 (20 marks)**

1. Explain 5 applications that Artificial Intelligence has brought in our day to day lives. (5 marks)
2. Explain the meaning of below terms:
3. Perception (2 marks)
4. Reasoning (2 marks)
5. Fuzzy Logic (2 marks)
6. Using a diagram describe an agent and its components (5 marks)

Describe the Turing Test. (4 marks)

**STRUCTURED PROGRAMMING**

**QUESTION 1**

1. Define structured programming. **(2marks)**
2. Give the syntax of a Pascal program. **(2marks)**
3. What are Bespoke Applications? **(3 marks)**
4. Explain the Internet Based Programming. **(3marks)**
5. Compare and contrast low level programming language with high level programming languages. **(4marks)**
6. Write a code for a simple Pascal code that displays **“HelloWorld”**. Countercheck your code to ensure it is syntactically correct. **(6marks)**

**QUESTION 2**

1. Discuss below program design tools. **(6 marks)**
2. Flowcharts
3. Algorithm
4. Structured Charts
5. What is the difference between writeln() and write() functions of Pascal **(2 marks)**
6. Explain the meaning of the following. **(6marks)**
7. begin
8. readln()
9. end
10. Write a Pascal code to calculate and display sum of 3 variables. **(6marks)**

**QUESTION 3**

1. Using examples, state four types of Data types in PASCAL programming. **(4marks)**
2. Define the following terms: **(8marks)**
3. Data types
4. Variable Declaration
5. Variable Initialization
6. Variable Assignment
7. A program is required that accepts an integer and checks whether it’s even or odd. If it’s even, the program outputs the message **Even** otherwise it outputs the message **Odd**.
8. Draw a flow chart that shows the logic in the program. **(5marks)**
9. State any three types of errors encountered in a structured program. **(3marks)**

**QUESTION 4**

1. With an example, define a variable. **(3marks)**
2. A program is required that evaluates average of 4 numbers and print the output. The values are captured at run time (i.e. prompts user to enter the values). **(10marks)**
3. Develop a flowchart that will be used to develop the program.
4. Write an algorithm that will be used to develop the program.
5. Discuss the relevance of indentation and comments on one’s code. (**4marks)**
6. State three rules for naming a variable in PASCAL programming. **(3marks)**

**QUESTION 5**

1. Discuss the Program Development Lifecycle. **(10marks)**
2. Name five reserved/key words in PASCAL. **(5marks)**
3. State and explain basic variables in Pascal. **(5marks)**