Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 08

M.Tech. (Emb. Sys.) (2018 & Onwards) (Sem.–1)

PROGRAMMING LANGUAGES FOR EMBEDDED SOFTWARE

Subject Code : MTES-101-18

M.Code : 75808

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1.Attempt any FIVE questions out of EIGHT questions.

2.Each question carries TWELVE marks.

1. a) Using bitwise operator write a program in C++ to check the given number for being even or odd. Explain your answer. (4)

   b) Explain the concept of inheritance in C++ with suitable programming example in C++. (4)

   c) Give at least 4 major concerns of embedded system programming. (4)

2. a) Differentiate between procedural, modular and object oriented and generic programming techniques. Asses the advantage and disadvantages of above-mentioned programming technique in context of embedded software development. (8)

   b) How the testing and debugging is done for the software of embedded system? (4)

3. a) Explain the difference between thread and process with suitable example. (4)

   b) How the communication takes place in thread and process? (4)

   c) Explain about the role of access specifier in C++. How many kinds of access specifier are available in C++? (4)

4. a) What are the code-optimization issues in embedded software? What steps can be taken to optimize the code in embedded software? (8)

   b) Explain the concept of friend function and inline function in C++ and its usability in embedded programming. (4)

5. a) What are the basic principles are of object-oriented programming? Explain the concept of overloading and overriding with the help of a programming example in C++. (8)

   b) Define Exception in context of C++ programming. How exceptions are handled in C++? (4)

6. a) Why do we need to follow a software development model in embedded software development? (4)

   b) Explain and differentiate with the help of diagram among **any two** different software development model. (8)

7. a) What do you understand by client-side scripting language? How it is different from the server-side programming languages? Explain with suitable example. (8)

   b) Write a program in Javascript to validate the input from user for being a number. If the number entered by user is numeric the output should be 'OK' and for non-numeric input the output should be 'Please enter numerical input'. (4)

8. Write short notes on **any three** of the following :

   a) Dynamic memory allocation in C++. (4)

   b) Linked stack and queue. (4)

   c) Interrupt handling in C. (4)

   d) Primary data structures in PERL (4)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.