

R18

Code No: 156AV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, March - 2024

EMBEDDED SYSTEM DESIGN

(Common to ECE, ECM)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) List out the applications of an embedded systems. [2]
- b) Explain the purpose of an embedded systems. [3]
- c) Write the differences between ROM and RAM. [2]
- d) Differentiate a sensor and an actuator. [3]
- e) What is meant by assembly language program? [2]
- f) What are the drawbacks of assembly language-based firmware development? [3]
- g) Define multiprocessing. [2]
- h) Draw the generic architecture diagram of an operating system. [3]
- i) What are the types of sockets? [2]
- j) What are the challenges in concurrent execution? [3]

PART – B**(50 Marks)**

2. Discuss the important differences between a computer and an embedded system. [10]
- OR**
3. List out and discuss quality attributes of an embedded system in detail. [10]
 4. Explain the onboard and peripheral communication interfaces with examples. [10]
- OR**
5. What are the embedded system requirements? Discuss the factors that are to be considered while selecting the memory devices for an embedded system. [10]
 6. What is a reset circuit? Explain the need and operation with a neat circuit diagram. [10]
- OR**
7. Explain the super loop based embedded firmware design approach. [10]
 8. Write short note on the following:
 - a) Memory management
 - b) Process management
 - c) Device management
 - d) File management. [2+3+2+3]

OR

- 9.a) Discuss the advantages and disadvantages of various operating systems. [5+5]
b) Explain about multitasking with a suitable example. [5+5]
10. Describe various methods to choose an operating systems. [10]
- OR**
11. What is remote procedure call? List out the sequence of events in remote procedure call. Discuss the advantages and disadvantages of remote procedure call. [10]

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Used paper March-2024