

20U5113

(Pages:2)

Name:

Reg. No.....

FIFTH SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2022

(Regular/Supplementary/Improvement)

CC18U GEC5 ES14 – EMBEDDED SYSTEM

(Information Technology – Common Course)

(2018 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

PART A

Answer *all* questions. Each question carries 1 mark.

1. ----- design considers both the hardware and software during the embedded design.
2. Which of the following language can describe the hardware?
a) C++ b) C c) VHDL d) Java
3. Embedded system as a ----- to perform a specific task.
a) Microcontroller based b) Software driven
c) Real time control system d) All of the above
4. Embedded systems are -----
a) General purpose b) Special purpose c) Both A and B d) None
5. Single clock cycle is sufficient in Harvard architecture.
a) True b) False
6. UART stands for -----
7. HCFSM stands for -----
8. ----- is the basic building block of software written under an RTOS.
9. ----- scheduling provides each task with an equal share the CPU execution time.
10. Assembly language programs must be translated into machine code by a program called an -----

(10 × 1 = 10 Marks)

PART B

Answer any *eight* questions. Each question carries 2 marks.

11. What is digital signal processor (DSP)?
12. What are the common characteristics of embedded systems?
13. What is instruction register?
14. What is cache memory? What is its use?
15. What is assembly language program?

16. What is microcontroller?
17. What is FIFO cache replacement policy?
18. What are non-maskable interrupts?
19. What is the difference between a message passing and shared data techniques?
20. List the basic states of a process.
21. What is simulation?
22. What is meant by FSM synthesis?

(8 × 2 = 16 Marks)

PART C

Answer any *six* questions. Each question carries 4 marks.

23. What is an embedded system? Explain with an example.
24. What is Application specific processor?
25. What is an instruction set? Explain the different categories of instructions.
26. What are the different types of ROM?
27. What is the difference between strobe based and handshakes-based communication?
28. What is daisy chain arbitration?
29. Explain the sequential program model with an example.
30. What are the two main approaches to verification? Explain.
31. What are the differences between single bus and double bus structure?

(6 × 4 = 24 Marks)

PART D

Answer any *two* questions. Each question carries 15 Marks.

32. What is single purpose processor? What are the benefits of choosing a single purpose processor over a general purpose processor? What are the peripheral devices connected to a single purpose processor?
33. Briefly explain a) I/O addressing b) Interrupts c) Direct Memory Access
34. What is arbitration in embedded system? What are the different types of arbitration methods?
35. a) What is an embedded system? Explain with an example.
b) What are the design metrics?

(2 × 15 = 30 Marks)
