JIS UNIVERSITY

Roll Number | | | | | | | | | | | | |

JIS University

End Semester Examinations - Odd 2023

YCS5002 - Embedded Systems

Time: 2 Hrs | Maximum Marks: 50

Instructions to the candidate:

Figures to the right indicate full marks
Draw neat sketches and diagram wherever is necessary
Candidates are required to give their answers in their own words as far as practicable

Part A

Answer any Ten (10x1=10 Marks)

1. Which of the following is an example of small scale embedded systems? (1) CO2 BL1

a) Printer
b) DSP
c) Multiplexer
d) IP Cameras

2. Which of the following is a type of microprocessor? (1) CO1 BL1

a) CISC
b) RISC
c) EPIC
d) All of the mentioned

3. ARM stands for (1) CO1 BL1
a) Advanced RISC machine
b) Advance risk machine
c) Artificial running machine
d) Aviary running machine

4. The microprocessor of a computer can operate on any information if it is present in _____ only. (1) CO3 BL1

a) Program Counter
b) Flag
c) Main Memory
d) Secondary Memory

5. An SRAM has address lines from A0 to A15 and data width from D0 to D7. The total capacity of SRAM will be (1) CO4 BL2

a) 64MB
b) 32KB
c) 64 KB
d) 16 MB

6. Which of the following addressing method does the instruction, MOV AX,[BX] represent? (1) CO2 BL1

a) register indirect addressing mode
b) direct addressing mode
c) register addressing mode
d) register relative addressing mode

7. Which of the following is not true about the address bus? (1) CO1 BL1

a) It consists of control PIN 21 to 28
b) It is a bidirectional bus
c) It is 16 bits in length
d) Lower address bus lines (AD0 – AD7) are called "Line number"

8. Change in output of a sensor with change in input is (1) CO5 BL1

a) Threshold
b) Sensitivity
c) Slew rate
d) None of the mentioned

9. Find the odd one from the following (1) CO2 BL1

a) Real Time Embedded Systems
b) Stand Alone Embedded systems
c) Networked embedded systems
d) Static embedded systems

10. In a microprocessor, the address of the next instruction to next executed, is sorted in (1) CO1 BL2

a) Stack pointer
b) Address latch
c) Program counter
d) General purpose register

11. How many bit Program counter is available in 8085? (1) CO1 BL1

a) 8 bit
b) 16 bit
c) 32 bit

d) 4 bit

12. What is Microprocessor? (1) CO1 BL1

a) A multipurpose PLD that accepts binary data as input
b) A multipurpose PLD that accepts an integer as input
c) A multipurpose PLD that accepts whole numbers as input
d) A multipurpose PLD that accepts prime numbers as input

Part B

Answer any Two (2x5=10 Marks)

13. Write the difference between microprocessors and microcontrollers. What are the main differences between memory-mapped I/O and peripheral I/O? What is interfacing? (5) CO2 BL2

14. Draw timing diagram with explanation of the memory read machine cycle of 8085 instructions. (5) CO1 BL3

15. What is an opcode? What is the function of IO/M signal in the 8085? What is an operand? What are the Control signals used for DMA operation? What are the names of 16 – bit registers used in 8085 microprocessor (5) CO1 BL1

16. Attempt all questions. (5)

a) What are the types of machine cycle present in 8085 and write their corresponding T state. (3) CO1 BL2

b) What do you mean by instruction cycle, machine cycle and T state? (2) CO1 BL2

Part C

Answer any Three (3x10=30 Marks)

17. Write a Short on: (10)

a) DMA Controller (5) CO2 BL2

b) RISC architecture (5) CO1 BL1

18. Write Difference between: (10)

a) RISC Architecture and CISC Architecture (5) CO1 BL1

b) Von-Nuemann and Havard Archietecture (5) CO2 BL2

19. Attempt all questions (10)

a) Explain instruction set architecture used by ARM processors. What is CPSR? (5) CO3 BL3

b) What are the types of instruction sets used in ARM architecture? Draw the CPSR register structure. (5) CO3 BL3

20. Write the Difference Between: (10)

a) Memory Mapped I/O and Peripheral I/O (5) CO2 BL1

b) Microprocessors and Microcontrollers (5) CO1 BL1

21. Attempt all questions. (10)

a) What is an opcode? What is an operand? What is the function of of IO/M signal in the 8085? (6) CO1 BL1

b) What are the control signals used for DMA operation? What are the names of 16bit registers used in 8085 microprocessor.? (4) CO1 BL1