**20CS305/20CB305/20DS305/20IT305**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **March, 2022** | **Common to CB,CS,DS and IT** | | |
| **Third Semester** | **Computer Organization** | | |
| **Time:** Three Hours | | **Maximum:7**0 Marks | |
| *Answer Question No.1 compulsorily.* | | | (14X1 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |
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| 1. | a) | | Convert (F3)16= (?)10 | CO1 |  |
|  | b) | | Convert (110111.1010)2 = ( ? )8 | CO1 |  |
|  | c) | | Define Computer Organization | CO1 |  |
|  | d) | | Differentiate direct address and indirect address | CO2 |  |
|  | e) | | Define Effective address | CO2 |  |
|  | f) | | Draw the instruction format | CO2 |  |
|  | g) | | What is the reverse polish notation for the following (3\*4)+(5\*6) | CO3 |  |
|  | h) | | Write any two addressing modes | CO3 |  |
|  | i) | | Write any two arithmetic instructions | CO3 |  |
|  | j) | | Define RISC | CO3 |  |
|  | k) | | Define Auxiliary memory | CO4 |  |
|  | l) | | Differentiate RAM and ROM | CO4 |  |
|  | m) | | Define programmed I/O | CO4 |  |
|  | n) | | What is the full form of DMA | CO4 |  |
| **Unit - I** | | | | | |
| 2. | a) | Explain 2’s complement and 9’s complement with an example | | CO1 | 7M |
|  | b) | List and explain different types of logic Micro operations | | CO1 | 7M |
| **(OR)** | | | | | |
| 3. | a) | Perform the arithmetic operations (+42)+(-13) and (-42)-(-13) in binary using signed 2’s complement representation | | CO1 | 7M |
|  | b) | Draw the and explain the H/W implementation of Arithmetic logic shift unit | | CO1 | 7M |
| **Unit - II** | | | | | |
| 4. | a) | Draw the flow chart for instruction cycle | | CO2 | 7M |
|  | b) | Explain design of Accumulator Logic with a neat sketch | | CO2 | 7M |
| **(OR)** | | | | | |
| 5. | a) | Explain different types of memory reference instructions | | CO2 | 7M |
|  | b) | Explain about address sequencing of Micro programming control | | CO2 | 7M |
| **Unit - III** | | | | | |
| 6. | a) | List the different types of instruction formats with an example | | CO3 | 4M |
|  | b) | Explain different type addressing Modes with example | | CO3 | 10M | |
| **(OR)** | | | | | |
| 7. | a) | Draw flow chart and hardware Implementation Booth's multiplication algorithm | | CO3 | 7M |
|  | b) | Multiply (-7)10 with (3)10 by using Booth's multiplication algorithm | | CO3 | 7M |
| **Unit - IV** | | | | | |
| 8. | a) | Draw the memory hierarchy in a computer system with a neat diagram | | CO4 | 4M |
|  | b) | Discuss in detail about cache memory mapping techniques | | CO4 | 10M |
| **(OR)** | | | | | |
| 9. | a) | Explain about I / O Interface | | CO4 | 7M |
|  | b) | Discuss in detail about DMA | | CO4 | 7M |

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