

**B.Tech IV Semester End Examinations, December 2021**  
**COMPUTER ARCHITECTURE AND ORGANIZATION (19APC0406)**  
**(Electronics & Communication Engineering)**

**Time: 3 Hours**

**Max. Marks: 70**

**PART-A**

**(10x2=20 M)**

**(Compulsory Question)**

**Answer the following:**

- ✓1) a) Convert the number  $(7654)_8$  to hexadecimal.
- ✓b) What is Bus? Draw the single bus structure.
- ✓c) Differentiate between Assembler and Compiler.
- ✓d) What is the difference between Machine Language and Assembly Language?
- ✓e) Define Indirect addressing Mode.
- ✓f) What is register?
- ✓g) In floating point numbers when so you say that an underflow or overflow has occurred?
- ✓h) What is a Micro Program? How is it different from a program?
- ✓i) Define Memory address register.
- ✓j) Define cache coherence.

**PART-B**

**(5x10=50 M)**

**(Answer One FULL Question from each Unit; All questions carry EQUAL marks)**

**UNIT-I**

- ✓2) Write the floating point presentation in memory according to IEEE standard with diagram  
(OR)

- 3) What is register transfer language? Explain the data movement among registers.

**UNIT-II**

- 4) How the processor does execute an instruction? Explain with suitable example and neat diagram.

**(OR)**

- ✓5) What are the different phases a basic computer instruction cycle consists? Explain instruction cycle with flowchart.

**UNIT-III**

- ✓6) What is stack organization? Explain the following with respect to stack organization.  
 ✓i) Register stack    ✓ii) Stack Operations    ✓iii) Reverse Polish Notation

**(OR)**

- 7) Explain Data transfer and manipulation, Program control instruction with examples.

**UNIT-IV**

- ✓8) What is address sequencing? Explain the conditional branching and mapping of instruction in it.

**(OR)**

- 9) Derive an algorithm in flowchart form for adding and subtracting two fixed point binary numbers when negative numbers are in signed-1's complement representation.

**UNIT-V**

- 10) a) Explain in detail about strobe control method of asynchronous data transfer?  
 b) What is the disadvantage of strobe method? Explain how handshake method solves the problem?

**(OR)**

- 11) Explain various Mapping process in cache Memory in detail.

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