Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – 4(NEW) • EXAMINATION – SUMMER 2018

Subject Code: 3340705 Date: 07-May-2018

Subject Name: Computer Organization And Architecture

Time: 10:30 AM TO 01:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1 Answer any seven out of ten. **14**

1. Write difference between static and dynamic RAM.
2. Define register transfer language.
3. Write and explain four symbols used in register transfer language.
4. Explain micro-programmed control organization.
5. Write and explain any two arithmetic micro-operations.
6. Explain stack organization with example.
7. Write four names of secondary storage devices.
8. Define : (a) Register (b) Flip Flop
9. Write difference between RAM and ROM.
10. Draw block diagram for micro-operation P : R2 ← R1.

Q.2 (a) Explain any three logical micro-operation with example. **03**

OR

(a) Draw block diagram of 4-bit register. **03**

(b) Draw block diagram of 4-bit binary adder. **03**

OR

(b) Draw three basic computers instruction format. **03**

(c) Illustrate direct and indirect addressing with example. **04**

OR

(c) List registers for the basic computer along with its name, size and function. **04**

(d) Draw and explain control unit of basic computer. **04**

OR

(d) Draw flowchart for instruction cycle. **04**

Q.3 (a) Explain execution of BSA instruction. **03**

OR

(a) Draw flowchart for interrupt cycle. **03**

(b) Explain cache memory **03**

OR

(b) Explain three modes of data transmission. **03**

(c) Explain machine language v/s high level language. **04**

OR

(c) Write and explain different phases of instruction cycle. **04**

(d) Explain Flynn's classification of computers. **04**

OR

	(d)	Explain ROM, PROM, EPROM, EEPROM	**04**
Q.4	(a)	Explain asynchronous serial transfer.	**03**
		OR	
	(a)	Write short note on RISC.	**03**
	(b)	Draw timing diagram for micro-operation D_3T_4 : SC ← 0.	**04**
		OR	
	(b)	Explain 0 address, 1 address, 2 address and 3 address instruction with example.	**04**
	(c)	List and explain any seven addressing modes with example.	**07**
Q.5	(a)	Draw trace of stack operations to evaluate 3*4+5*6.	**04**
	(b)	Explain CPU-IOP communication.	**04**
	(c)	Give example of pipe-line processing.	**03**
	(d)	Explain parallel processing.	**03**

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