

ET503M - Computer Architecture

P. Pages : 2

Time : Three Hours



GUG/S/23/13924

Max. Marks : 80

- Notes :
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Assume suitable data wherever necessary.

1. a) Explain in brief basic functional units of computer. **8**
- b) Write short note on- **8**
- i) Assembly language
 - ii) Queue

OR

2. a) What are the different types of instructions? Explain in detail. **8**
- b) Explain with example the following addressing modes. **8**
- i) Register Direct
 - ii) Register Indirect
 - iii) Index Mode
 - iv) Auto Increment
3. a) Perform the division using Restoring Algorithm - $96/6$. **8**
- b) Represent the following numbers in IEEE floating point format. **8**
- i) 0.5
 - ii) 1365.125

OR

4. a) Perform multiplication using Booth's Algorithm. **8**
- i) -13×12
 - ii) -16×-8
- b) Perform the division using Non-restoring algorithm - $8/3$ **8**

5. a) Explain in detail multiplier control unit in microprogrammed control. 8
b) Explain with diagram control unit organization for Hardwired control. 8

OR

6. a) Write short note on Instruction sequencing. 8
b) Explain in detail the micro routine for Branch <0. 8
7. a) Explain two channel DMA controller. 8
b) What are the different mapping techniques in cache memory? 8

OR

8. a) Explain ROM memories and its types. 8
b) Give block diagram and explain in detail, the organization of $64k \times 8$ memory module using 16×1 . 8
9. a) Write short note on interconnected networks. 8
b) Explain in detail different forms of parallel processing. 8

OR

10. a) Write short note on Data Hazards. 8
b) Write short note on pipeline performance. 8
