Roll No. | | | | | | | | | | | | Total No. of

Total No. of Questions : 09

B.Tech. (CSE/ECE/ME) (Sem–7,8)

COMPUTER ORGANISATION AND ARCHITECTURE

Subject Code : BTES401-18

M.Code : 90491

Date of Examination : 22-12-2024

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write short note on the following :

a) Define Computer Architecture and mention functional blocks of a computer.

b) Take one example and show the working of booth multiplier.

c) What is micro-programmed design approach?

d) Differentiate between privileged and non-privileged instructions.

e) What is the role of interrupts in process state transition?

f) Highlight major points about the concept of pipelining.

g) Define cache coherency and why is it important?

h) What is memory interleaving and why is it used in memory organization?

i) Mention few write policies used for memory organization.

j) What are the advantages of non-restoring techniques for division?

SECTION-B

2. What is DMA and how is it used to transfer data from the peripherals?

3. Discuss Software interrupts and exceptions in detail.

4. Outline the case study of design of a simple hypothetical CPU.

5. Describe the concept of hierarchical memory organization.

6. Represent the decimal number $(65.175)_{10}$ in IEEE standard floating-point format in a single precision method (32-bit) representation method.

SECTION-C

7. Explain the multiplication arithmetic covering shift and add and Booth multiplier by taking a suitable example for each.

8. Identify the mapping functions used for memory organization and describe any one replacement algorithms in detail.

9. **Write short notes on the following :**

   a) Memory Organization.

   b) CPU (Control Unit Design).

Roll No. | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CSE / EE/ ECE/ ME) (Sem.–7,8)

PRODUCT DESIGN AND DEVELOPMENT

Subject Code : BTME614-18

M.Code : 90482

Date of Examination : 02-01-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

a. What are the various product strategies?

b. Explain Product Value.

c. Define breakeven point.

d. What do understand by house of quality?

e. What do you mean by Ethics?

f. Define allowances. What role does allowances have in product design?

g. Write a short note on profit and competitiveness.

h. Elaborate in detail "*Functional Design Practice*".

i. What do you mean by *'Product Design'*?

j. Describe *'color as an element of design'*.

SECTION-B

2. Differentiate between "*Design by Evolution*" and "*Design by Innovation*".

3. What do you mean "*Aesthetics*"? How does aesthetics affect the perception of a product?

4. Describe "*Ease of Location and Clamping*" with respect to manufacturing considerations.

5. Explain with help of diagram "*Break Even Analysis*".

6. Who is a process engineer? What role he has in industry?

SECTION-C

7. a. What are the essential factors of Product Design?

   b. Explain in detail "*Production Consumption Cycle*".

8. Differentiate between producibility requirements in:

   a. Design of Machine Components

   b. Pressed Component Design

   c. Design for Machining Ease

   d. Design for Powder Metallurgical parts.

9. **Explain any two in detail :**

   a. Concurrent Engineering

   b. Quality Function Deployment

   c. Rapid Prototyping

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.