

# **AE-1216**

B.Sc. (Part - I)  
Term End Examination, 2016-17

## **COMPUTER SCIENCE**

Paper - I

Computer Hardware

*Time* : Three Hours]      [*Maximum Marks* : 50

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**Note** : Answer **all** questions. All questions carry equal marks. Answer should be brief and to the point. Draw diagrams to justify your answers. Assume suitable data if required.

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### **Unit-I**

1. (a) What is Hardware ? Discuss types of Hardware and their functions with examples.
- (b) What is Operating System ? Describe the different types of Operating System.

**OR**

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2. (a) What is Procedural Oriented Programming Language ? How is it different from object oriented programming ?
- (b) What is Number System ? Write the different types of Number System. Convert 101112 into decimal system.

### **Unit-II**

3. (a) What are the different types of Computer Communication Code ? Explain BCD code and ASCII code.
- (b) Write notes on the following :
- (i) BJT as switch
  - (ii) AND gate

**OR**

4. (a) What is Mathematical Logic ? Describe the seven basic logic gates.
- (b) Write short notes on the following :
- (i) EBCDIC code
  - (ii) Gray code

### **Unit-III**

5. (a) What are the main characteristics of logic families ? Describe the different types of logic families.

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- (b) Write short notes on the following :
- (i) Full adder circuit
  - (ii) Ex-nor circuit with diagram

**OR**

6. (a) What is a Boolean Expression ? Discuss De Morgan's Laws.
- (b) Write short notes on the following :
- (i) Half adder circuit
  - (ii) Ex-or circuit with diagram

#### **Unit-IV**

7. (a) What is Multiplexer ? Discuss the different types of Multiplexer.
- (b) Write short notes on the following :
- (i) Propagation delay
  - (ii) Set up and Hold time

**OR**

8. (a) What is Encoder ? Give examples of Encoder. What is the relation between encoder and multiplexer ?
- (b) Write short notes on any **two** of the following :
- (i) Schmitt trigger

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(ii) Bistable multivibrators

(iii) D Flip-flop

### **Unit-V**

9. What is Computer memory ? Discuss the different types of memory.

***OR***

10. (a) What is Shift Register ? Describe the different types of Shift Register.
- (b) What is a Counter ? Discuss the difference between a counter and a register.
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