Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2018

EN3ES05 Basic Computer Engineering

Programme: B.Tech. Branch/Specialisation: All

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Which of the following keeps result of the instructions? **1**

(a) Program Counter (b) Accumulator

(c) Memory Address Register (d) Instruction Register

ii. A linear list, in which element can be added or removed from one end only, but not in the middle, is known as: **1**

(a) Stack (b) Queue (c) Linked List (d) Array

iii. Which of the following schema describe the storage structure of database? **1**

(a) Internal (b) External (c) Logical (d) All of these

iv. Which of the following is not DDL statement? **1**

(a) Create (b) Alter (c) Insert (d) Drop

v. Which of the following is an example of non-contiguous memory allocation? **1**

(a) Best Fit (b) Paging (c) First Fit (d) Worst Fit

vi. Compaction is the solution of: **1**

(a) Internal Fragmentation (b) External Fragmentation

(c) Swapping (d) Paging

vii. Which of the following device is used at network layer of OSI model? **1**

(a) Switch (b) Gateway (c) Router (d) Repeater

viii. Connection oriented service is provided by.....Protocol. **1**

(a) TCP (b) UDP (c) IP (d) All of these

ix. Which of the following is said to be first generation language? **1**

(a) Machine (b) Symbolic (c) High Level (d) All of these

x. C, C++, Java are example of: **1**
(a) First Generation Language (b) Second Generation Language
(c) Third Generation Language (d) Fourth Generation Language

Q.2 i. Convert $(11011.0110)_2 \rightarrow (\ )_{10}$. **2**
ii. Draw functional block diagram of computer. Explain all components of computer in brief. **3**
iii. Define data structure. Explain stack, queue, linked list and tree with suitable example. **5**
OR iv. What do you mean by bus in computer architecture? Draw bus architecture of computer system. Explain different types of bus used in computer system. **5**

Q.3 i. Write definition of database. Write properties of database. **2**
ii. What do you mean by DBA? Explain the role played by DBA in database management system. **3**
iii. Explain three level architecture of DBMS with the help of diagram. Why it is used in DBMS? **5**
OR iv. List various types of database language. Explain each type with syntax and example. **5**

Q.4 i. What are the roles played by operating system? **2**
ii. Explain Deadlock with suitable example. Write various conditions to occur deadlock. **3**
iii. What are the various methods to allocate memory by OS? How OS allocates memory in contiguous way? Explain each method with suitable example. **5**
OR iv Define Process. Draw lifecycle of process. Explain all states in detail. **5**

Q.5 i. What do you mean by computer network? What are the advantages of computer networking? **2**
ii. Describe different types of computer network in brief. Also write example of each network. **3**
iii. What are the different topologies used in the computer network? Explain at least 5 topologies with diagram. **5**

OR iv. Explain OSI model layers in brief with diagram. **5**

Q.6 i. Give definition of software. How software interacts with hardware? **2**
ii. Explain different categories of software with example. **3**
iii. Discuss generation of programming languages in detail. Give one example for each generation. **5**
OR iv. Discuss various features that need to be taken care while selecting good programming language. Describe each feature in detail with example. **5**

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EN3ES05 Basic Computer Engineering
Scheme of Marking

Q.1	i.	Which of the following keeps result of the Instructions? (b) Accumulator		**1**
	ii.	A linear list, in which element can be added or removed from one end only, but not in the middle, is known as: (a) Stack		**1**
	iii.	Which of the following schema describe the storage structure of Database? (a) Internal		**1**
	iv.	Which of the following is not DDL statement? (c) Insert		**1**
	v.	Which of the following is an example of Non- contiguous Memory allocation? (b) Paging		**1**
	vi.	Compaction is the solution of: (b) External Fragmentation		**1**
	vii.	Which of the following device is used at Network layer of OSI Model? (c) Router		**1**
	viii.	Connection Oriented Service is provided by.....Protocol. (a) TCP		**1**
	ix.	Which of the following is said to be First Generation Language? (a) Machine		**1**
	x.	C, C++, Java are example of: (c) Third Generation Language		**1**
Q.2	i.	Covert $(11011.0110)_2$ → $(27.375)_{10}$.	2 marks	**2**
	ii.	Functional block diagram of Computer. Components of computer (0.5 mark *4)	1 mark 2 marks	**3**
	iii.	Definition of Data Structure Stack Queue Linked List	1 mark 1 mark 1 mark 1 mark	**5**
		Tree	1 mark	
OR	iv.	Definition of Bus Architecture diagram Address bus Control bus Data bus	1 mark 1 mark 1 mark 1 mark 1 mark	**5**
Q.3	i.	Definition of Database. Properties.(0.5 mark* 3)	0.5 mark 1.5 marks	**2**
	ii.	DBA definition Role played by DBA (0.5 mark*4)	1 mark 2 marks	**3**
	iii.	Three Level architecture diagram Use in DBMS Detail of levels (1 mark *3)	1 mark 1 marks 3 marks	**5**
OR	iv.	Name of database languages. Type with syntax and example. (1.5 mark*3) (Type with syntax = 1 mark each Example = 0.5 mark each)	0.5 mark 4.5 marks	**5**
Q.4	i.	Roles played by Operating System (4 point) (0.5 mark *4)	2 marks	**2**
	ii.	Deadlock definition Example with diagram Name of Condition (0.5 mark *4)	0.5 mark 0.5 mark 2 marks	**3**
	iii.	Name of all methods Fixed partitioning detail Example Diagram Dynamic partitioning detail Example Diagram	1 marks 0.5 mark 1 mark 0.5 mark 0.5 mark 1 mark 0.5 mark	**5**
OR	iv	Definition of process Process life cycle Diagram	1 mark 1 mark	**5**

		States : - New, Ready, Running, wait, Terminate, Interrupt		
		(0.5 mark *6)	3 marks	
Q.5	i.	Definition of Computer Network	0.5 mark	**2**
		Advantages of Computer Networking		
		(0.5 mark *3)	1.5 marks	
	ii.	LAN, MAN, WAN (Or any)		**3**
		1 mark*3	3 marks	
	iii.	Topologies Bus, Star, Tree, Ring, Mesh		**5**
		(1 mark*5)	5 marks	
OR	iv.	OSI Model		**5**
		Diagram	1 mark	
		Layers	4 Marks	
Q.6	i.	Definition of Software.	1 mark	**2**
		Software interaction with hardware	1 mark	
	ii.	System Software	1 mark	**3**
		Example	0.5 mark	
		Application Software	1 mark	
		Example	0.5 mark	
	iii.	Generation of Programming Languages	1* 4 = 4 marks	**5**
		one example for each generation.	0.25*4 = 1 mark	
OR	iv.	Various features of programming language.	(1*5) = 5	**5**

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