Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2019

CA5CO02 Information Technology

Programme: MCA Branch/Specialisation: Computer Application

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. The Fourth generation of computers are based upon: **1**
(a) Very large scale integration
(b) Artificial Intelligence
(c) Medium scale integration
(d) Vacuum Tubes

ii. This is not an application software: **1**
(a) Linker (b) Loader (c) Assembler (d) None of these

iii. The instructions like MOV and ADD are called as **1**
(a) OP-Code (b) Operators (c) Commands (d) None of these

iv. The purpose of Origin directive is **1**
(a) To indicate starting position of memory
(b) To indicate starting position of program code
(c) To indicate the purpose of the code
(d) To list the location of all registers used

v. Pee hole optimization **1**
(a) Loop optimization (b) Local optimization
(c) Constant Folding (d) Data flow analysis

vi. A monitor is a type of: **1**
(a) Semaphore
(b) Low level synchronization construct
(c) High level synchronization construct
(d) None of these

vii. Which is not a feature of a compiler **1**
(a) Scans the entire program first
(b) Slow for debugging
(c) Execution time is more
(d) Removes all the syntax errors and then executes

viii. In a two pass assembler the object code is generated during **1**
(a) Second phase (b) Zeroth phase
(c) First phase (d) All of these

ix. Records are organised in sequence based using key field **1**
(a) Pile (b) Sequential File
(c) Indexed Sequential File (d) Indexed File

x. Airline reservation system and inventory system are examples of: **1**
(a) Pile (b) Sequential File
(c) Indexed Sequential File (d) Indexed File

Q.2 i. Write difference between application and system software. **2**

ii. Draw the basic structure of a COMPUTER. **3**

iii. Elaborate second generation of computer evolution. **5**

OR iv. What are optical storage devices. Explain its basic functionality. **5**

Q.3 i. What are Macro processors? State with an example. **2**

ii. Elaborate in detail, the elements of Assembly Language Programming. **8**

OR iii. Write algorithm for Pass – II Assembler. **8**

Q.4 i. What are user interfaces? Explain with example **3**

ii. Elaborate various aspects of compilation performed by a Compiler. **7**

OR iii. How editors help in program development? Elaborate. **7**

Q.5 i. What is relocation? How Linkers perform this? **4**

ii. Describe the two pass loader scheme. **6**

OR iii. Compare and contrast Subroutine linkages and Binder Overlays. **6**

Q.6 Attempt any two:

i. What do you mean by file organization? Explain multi key file organization with its advantages and disadvantages. **5**

ii. Discuss the various techniques through which file can be accessed **5**

iii. Describe the structure of index file organisation. **5**

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Marking Scheme
CA5CO02 Information Technology

Q.1	i.	The Fourth generation of computers are based upon: (a) Very large scale integration		**1**
	ii.	This is not an application software: (d) None of these		**1**
	iii.	The instructions like MOV and ADD are called as (a) OP-Code		**1**
	iv.	The purpose of Origin directive is (a) To indicate starting position of memory		**1**
	v.	Pee hole optimization (a) Loop optimization		**1**
	vi.	A monitor is a type of: (c) High level synchronization construct		**1**
	vii.	Which is not a feature of a compiler (c) Execution time is more		**1**
	viii.	In a two pass assembler the object code is generated during (a) Second phase		**1**
	ix.	Records are organised in sequence based using key field (b) Sequential File		**1**
	x.	Airline reservation system and inventory system are examples of: (d) Indexed File		**1**
Q.2	i.	Difference between application and system software		**2**
		1 mark for each difference	(1 mark * 2)	
	ii.	Structure of a COMPUTER		**3**
		Diagram	1 mark	
		Explanation	2 marks	
	iii.	Second generation of computer evolution.		**5**
		Features	2 marks	
		Advantages and disadvantages	3 marks	
OR	iv.	Optical storage devices Its basic functionality.		**5**
Q.3	i.	Definition of macro processors	1 mark	**2**
		Example	1 mark	
	ii.	Elements of Assembly Language Programming.		**8**
		List of elements	2 marks	
		Explanation of each element	6 marks	
OR	iii.	Pass – II Assembler.		**8**
		Definition	2 marks	
		Algorithm	6 marks	
Q.4	i.	User interfaces with example		**3**
		1.5 marks for each interface	(1.5 marks * 2)	
	ii.	Aspects of compilation performed by a Compiler		**7**
		List of compiler phase	2 marks	
		Explanation of each phase	5 marks	
OR	iii.	How editors help in program development		**7**
		List of editors	2 marks	
		Explanation of each editor	5 marks	
Q.5	i.	Definition of relocation	1 mark	**4**
		Performance of Linkers with diagram	3 marks	
	ii.	Two pass loader scheme		**6**
		Explanation of loader	3 marks	
		Diagram	3 marks	
OR	iii.	Subroutine linkages	3 marks	**6**
		Binder Overlays.	3 marks	
Q.6		Attempt any two:		
	i.	Definition of file organization	1 mark	**5**
		Explanation of multi key file organization with example	4 marks	
	ii.	Techniques through which file can be accessed		**5**
		2 marks for each technique (2 marks * 2)	4 marks	
		List of techniques	1 mark	
	iii.	Structure of index file organisation.	1 mark	**5**
		Explanation of structure	4 marks	

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