## **RAMAKRISHNA MISSION VIDYAMANDIRA**

(Residential Autonomous College under University of Calcutta)

### SECOND YEAR B.A./B.SC. THIRD SEMESTER (July – December) 2014 Mid-Semester Examination, September 2014

Date : 16/09/2014 Time : 12 noon - 1 pm

### **COMPUTER SCIENCE (General)**

Paper : III

Full Marks : 25

# [Use a separate answer book for each group]

# <u>Group – A</u>

(Answer <u>Question No. 1</u> and <u>any one</u> from the rest)

1.	Co	Consider the following schema :				
	SU	SUPPLIER ( <u>Sid</u> , Sname, Saddr)				
	PA	PARTS ( <u>Pid</u> , Pname, Color)				
	CA	CATALOG (Sid, Pid, Cost)				
	An	Answer the following queries in relational algebra.				
	a)	Find the name of all suppliers who supply yellow parts.	[2]			
	b)	Find the name of all suppliers who supply both blue and black parts.	[2]			
2.	a)	Differentiate between equijoin and natural join.	[2]			
	b)	Explain weak entity set with an example.	$[2^{1/2}]$			
	c)	"Candidate key is a subset of super key" — Justify the statement.	[2]			
	d)	When is DBMS approach not suitable?	[2]			
3.	a)	State advantage of database approach overfile processing approach.	[21/2]			
	b)	Describe three schema architecture of database system.	[4]			
	c)	What is derived attribute? Give an example.	[2]			

## <u>Group – B</u>

#### (Answer <u>Question No. 4</u> and <u>any one</u> from the rest)

4.	a)	What are the two different schemes for representing floating point numbers according to	
		IEEE-754 project.	[2]
	b)	What is a volatile memory?	[2]
5.	a)	Differentiate Von-Neumann and Harvard architecture.	[21/2]
	b)	Show different signed number representation of binary numbers with suitable examples.	[4]
	c)	What do you mean by arithmatic shift and logical shift?	[2]
6.	a)	Explain the instruction cycle.	[4]
	b)	What is overflow and underflow in computer architecture?	[2]
	c)	What is Stack Pointer and Program Counter?	[21/2]

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