B.E. of Electrical Engineering (Part Time), 5th Year 2nd Semester Examination, 2018

SUBJECT : Special Paper – II (Real Time Systems)

Time: Three Hours

Full Marks: 100 (50 each part)

Use a separate Answer-Script for each part

Question No.	PART - I	Marks

Answer any three. Question No. 9 carries the maximum marks.

6. i) 'An RTS is a system where the correctness depends not only on the logical results' – justify.   **3+4+4+5**

   ii) Real Time system software needs parallelism – explain.

   iii) Why a life cycle models are required for an RTSS?

   iv) What are the merits and demerits of Water-Fall Life Cycle model?

7. (i) Describe different model building steps in Ward-Mellor life cycle.   **10+6**

   ii) Ward-Mellor life cycle model is based on modified Water-Fall Life Cycle model- Explain.

8. i) What are the origins of risks that may occur during software development process?   **4+4+8**

   ii) How risk is taken care of in Spiral Model?

   iii) Draw and explain the Spiral model.

Question No.	PART - I	Marks

9. i) Draw and explain the analysis model in brief.

5 +6+ 4+3

ii) Explain the term 'data objects', 'attributes' and 'relationship' with examples.

iii) DFD is a mechanism for fictional modeling as well as information flow modeling – Justify.

iv) What is CSPEC?

10. i) The textual description of a Mushroom Picking system is given below:

8+8

We would like to build a system to automate the picking of mushrooms. Mushrooms will pass on a conveyor belt, whilst the system will pick off mushrooms of the appropriate size. An operator will be provided with a means of starting and stopping the system, and of varying the picked mushroom size. Statistics on the mushrooms picked should be held, in order to produce management reports.

A mushroom scanner passes information on the size and position of the mushrooms to the system, as they pass on the conveyor belt. A mushroom picker is a system which is able to monitor the position of the mushroom picker and move it to any required position. The system can also command the mushroom picker to pick a mushroom at any time.

Draw an appropriate Context diagram and suitable DFD/CFD of the above system

B.E. ELECTRICAL ENGINEERING(PART TIME) 5ᵀᴴ YEAR 2ᴺᴰ SEM EXAMINATION, 2018

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No. of Questions	PART II	Marks
	Answer any three. *Two marks reserved for neatness and well oraganized answers.*	
1.(a)	State the different types of addressing mode and explain elaborately any there.	10
(b)	Discuss the advantage and disadvantage of load store design and memory register design.	6
2. (a)	Discuss about fetch and execute cycle.	8
(b)	What is interrupt handling? How single interrupt system is different from multiple interrupt system? Explain.	8
3. (a)	What is scheduling? State different types of scheduling.	*6*
(b)	Discuss about non preemptive scheduling.	10
4.(a)	What is deadline? Classify RTS based deadline.	8
(b)	Explain elaborately the functional requirement of an aircraft monitoring system.	8
5.	Write short notes on any two: (a)Watch dog Timer (b)Von Neumann bottleneck. (c) Semaphores and Mailboxes. (d) Round Robin System.	16