



INDIAN INSTITUTE OF INFORMATION TECHNOLOGY UNA IHPI

An Institute of National Importance under MoE

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School of Electronics CURRICULUM: IITUGECE22

Cycle Test - II

November 15, 2022

Time: 9:00 AM to 10:00 AM

Degree	B. Tech.	Branch	ECE
Semester	V		
Subject Code & Name	ECPE32: Embedded Systems		
Time: 60 Minutes	Answer All Questions	Maximum: 20 Marks	

Sl. No.	Question	Marks
1.a	What factors are considered in the selection of embedded memory selection?	1
1.b	How the data transfer is controlled in inter integrated circuit bus protocol? Explain with timing waveforms.	2
1.c	What is stepper motor? How is it different from ordinary dc motor?	2
2.a	What is Programmable Peripheral Interface (PPI)? Show the interfacing the 8255 PPI with an 8-bit controller.	1
2.b	Interpret the various states associated with a process and the state transitions with a neat diagram.	2
2.c	Compare Port I/O & Memory Mapped I/O.	2
3.a	Explain the various factors to be considered for the selection of a scheduling criteria	1
3.b	Which scheduling algorithm is best suited among FIFO, Round Robin, and Short Job First (SJF) in the following cases? Justify. i) The incoming processes are short and there is no need for the processes to execute in a specific order. ii) The processes are a mix of long and short processes and the task will only be completed if all the processes are executed successfully in a given time.	2
3.c	Three processes with process IDs P1, P2, P3 with estimated completion time 24, 3, 3 milliseconds respectively enter the ready queue together in order P2, P3, P1. Calculate the waiting time and Turn Around Time (TAT) for each process and the average waiting time and turnaround time.	2
4.a	Explain context switching. Why it is required?	1
4.b	Compare threads and processes in detail.	2
4.c	Explain the role of Watchdog Timer in Embedded System.	2

**** GOOD LUCK ****