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Question Paper Code

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M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023

Second Semester

M.E - Embedded System Technologies 20PESPC201 - REAL TIME OPERATING SYSTEMS

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A $(10 \times 2 = 20 \text{ Marks})$ Answer ALL Questions

1.	List the Top-down structured layers of operating system.	Marks, K-Level, CO 2,K1,CO1
2.	Differentiate between process and threads.	2,K2,CO1
3.	Illustrate the concept of context switch.	2,K1,CO2
4.	Define deadlock.	2,K1,CO2
5.	When do we need task synchronization?	2,K2,CO3
6.	What are the advantages and disadvantages of polling technique?	2,K2,CO3
7.	Mention any two distinct features of VX works.	2,K1,CO4
8.	Give the difference between nanokernel and microkernel.	2,K2,CO4
9.	What is embedded Linux?	2,K1,CO6
10.	Differentiate the two ways to create a user interface.	2,K2,CO6

PART - B $(5 \times 13 = 65 \text{ Marks})$

Answer ALL Questions

11. a) Explain file system organization and implementation issues pertaining 13,K2,C01 to an operating system. Also list the set of command functions of an operating system in this regard.

OR

- b) What do you mean by RPC? How RPC is implemented in a network 13,K2,C01 communication environment.
- 12. a) Explain the following:

(i) Message Queue.(ii) Mail boxes.(iii) Pipes.

5,K2,CO2

4,K2,CO2 4,K2,CO2

OR

b) What is critical section problem? How can it be solved using 13,K2,CO2 semaphore?

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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13. a) Explain event based and graph-based modelling technique with 13,K2,CO3 example. 13,K2,CO3 b) Explain the Bin Packing Scheduling algorithm. 13,K2,CO4 Discuss in detail porting of RTOS in to target. 14. a) OR 13,K2,CO4 b) Discuss the features of Vx works RTOS and its implementation in brief. 13,K2,CO6 List and explain the quality and properties of the code the 15. a) programmers expect. OR b) Draw and explain the generic architecture of embedded Linux systems. 13,K2,CO6 PART - C $(1 \times 15 = 15 \text{ Marks})$ 15,K2,CO5 Distinguish the different layouts in Android user interface. 16. OR

Build a Yamba application using the main Android building blocks.

15,K3,CO5