KUMARAGURU
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Register Number:……

M.E DEGREE EXAMINATIONS: JUNE 2017

(Regulation 2015)

Second Semester

EMBEDDED SYSTEM TECHNOLOGIES

P15EST201 : Real Time Operating Systems

COURSE OUTCOMES

CO1: Familiarity with key Real-Time Operating System terms and concepts.

CO2: Comprehend and ability to use tools to build an embedded real-time system

CO3: Ability to specify, design and implement a small embedded system.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Assertion (A): Assertion (A): migration transparency means that resources must indicated by users. CO2 [K_2]

   Reason (R) : be free to move from one location to another.

   a) A is true but R is false.
   b) A is false but R is true
   c) Both A and R are correct and R is the not correct explanation of A
   d) Both A and R are correct and R s the correct explanation of A

2. In RPC the different classes of failures are CO1 [K_2]

   (i) Request of client is lost
   (ii) Client unable to locate.
   (iii) Reply is lost
   (iv) Client crash after send the request

   Which of these statements are correct?

   a) i, ii and iv correct
   b) iii and iv correct
   c) i, and iii correct
   d) i,ii,iii, iv are correct.

3. The disadvantage of distributed system is ___. CO2 [K_4]

   a) Network saturation
   b) Software issue
   c) Security issue
   d) All three

4. Matching type item with multiple choice code CO3 [K_5]

ITEM	DESCRIPTION
A. Reliability	1. more total computing Power
B. Incremental Growth	2.one machine crash the whole can survive
C. Speed	3. Involve Spatially separated machines
D. Inherent Distribution	4. power added in small increments

	A	B	C	D
a)	2	1	3	4
b)	3	4	2	1
c)	2	4	1	3
d)	3	1	2	4

5. Assertion (A): Based on task handling method QNX RTOS have high priority level. CO3 [K_2]

Reason (R) : Because it is multi threaded .

a) Both A and R are Individually true and R is the correct explanation of A
b) Both A and R are Individually true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

6. Fault Tolerance is the ability of the system to continue function in the presence of ___ CO3 [K_2]

a) Hardware only
b) Software only
c) Both hardware and software
d) hardware or software

7. Real time image processing tradeoffs are CO2 [K_3]

(i) Performance Vs image resolution
(ii) Performance Vs storage.
(iii) Performance Vs input /output
(iv) No of task Vs Synchronization.

Which of these statements are correct?

a) i, ii and iv correct
b) iii correct and remaining wrong
c) i, ii and iii correct
d) all are correct.

8. VOIP configuration consist of CO1 [K_2]

1. Audio Source 2.Sound Card 3.Record Buffer 4.audio ADC code

Find the correct sequence?

a) 2-3-4-1
b) 1-2-4-3
c) 1-2-3-4
d) 1-3-2-4

9. The API of Task management of QNX RTOS is CO2 [K_2]

a) 0% b) 82%

c) 27% d) 100%

10. Micro kernel four minimal services are CO3 [K_4]

1. Inter process communication
2. Process management
3. Some memory management
4. Low level input/output

Find the correct sequence?

a) 1-2-4-3 b) 2-3-4-1

c) 1-3-2-4 d) 1-2-3-4

PART B (10 x 2 = 20 Marks)

11.	Write the types network topology?	CO1	[K_1]
12.	Define - system call interface	CO1	[K_4]
13.	What is system Call?	CO1	[K_2]
14.	What are the methods used for addressing process?	CO2	[K_3]
15.	Define -Critical path	CO2	[K_5]
16.	What are the three paradigms of virtual reality?	CO2	[K_1]
17.	Compare Fault and Failure.	CO3	[K_2]
18.	A software system is needed to handle packets of data that arrive at a rate of no more than 1 per second. For this program what type of kernel is suitable one?	CO3	[K_3]
19.	Define –Nano kernel and micro kernel.	CO3	[K_2]
20.	What is pSOS system?	CO3	[K_3]

PART C (6 x 5 = 30 Marks)

21.	How to implement a process, give an example.	CO2	[K_1]
22.	Define caching. List the various ways of doing caching in client memory?	CO1	[K_2]
23.	What is meant by client server model in distributed operating system? Describe it.	CO2	[K_4]
24.	Embedded system often operates in harsh environmental conditions. How the fault tolerant application used for this?	CO2	[K_3]
25.	Describe about C-Executive in embedded system?	CO3	[K_2]
26.	Draw the flow diagram for RTOS porting to a target and describe it.	CO3	[K_2]

Answer any FOUR Questions

PART D (4 x 10 = 40 Marks)

27.	How to implement the complex algebra , (**a+bi)(a-bi)** using petri net model with firing table?	CO1	[K_2]
28.	Explain about design and Implementation of processes. How to communication taken between processes?	CO2	[K_5]
29.	Explain in details with RPC with suitable example .	CO2	[K_2]
30.	Compare the two different types of RTOS operating system. How voyager web browser supporting the QNX? Explain it.	CO3	[K_4]
31.	Draw the block diagram of multimedia architecture. How embedded RTOS can help in real time image processing.	CO3	[K_3]

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