Hall Ticket No | | | | | | | | | | |

Question Paper Code: BES214

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech II Semester End Examinations (Regular) - July, 2018

Regulation: IARE–R16

EMBEDDED REAL TIME OPERATING SYSTEMS

Time: 3 Hours **(ES)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Briefly discuss several cases in which the number of bytes actually read is less than the amount requested. **[7M]**

   (b) Write the syntax of wait and waitpid function and differentiate between wait and waitpid functions. **[7M]**

2. (a) Write the syntax of open function and explain different constants from the <fcntl.h> header. **[7M]**

   (b) Illustrate sharing of open files between parent and child after fork. **[7M]**

UNIT – II

3. (a) List and briefly describe different key characteristics of an RTOS. **[7M]**

   (b) Illustrate a five-step scenario, how a kernel scheduler might use a task-ready list to move tasks from the ready state to the running state. **[7M]**

4. (a) What is recursive shared-resource-access synchronization and write the pseudo code for recursively accessing a shared resource . **[7M]**

   (b) Briefly discuss common operations that developers can perform with a task object from within the application. **[7M]**

UNIT – III

5. (a) Explain different functions that are considered part of the set in the general approach to uniform. **[7M]**

   (b) Illustrate the concept of uniform I/O driver table by taking an example. **[7M]**

6. (a) Differentiate between character-mode vs. block-mode devices. **[7M]**

   (b) Explain different steps that must take place to accomplish uniform I/O operations at the application-level. **[7M]**

UNIT – IV

7. (a) Explain different types of exceptions with real time examples. **[7M]**

   (b) List the functions performed by the soft-timer facility and enumerate the model for soft-timer handling facility by taking an example. **[7M]**

8. (a) Illustrate the process of loading and invoking exception handlers. **[7M]**

   (b) Explain different categories of timer-related operations for external software components and applications through API sets in RTOS. **[7M]**

UNIT – V

9. (a) What is TinyOS and explain different components in the architecture of TinyOS. **[7M]**

   (b) What is Vx works and list the functionalities of Vx works. **[7M]**

10. (a) List and briefly discuss the features of the system user of μC/OS-II to control the tasks. **[7M]**

    (b) Explain important blocks of application framework in android OS. **[7M]**

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