Student Registration Number

B

COURSE CODE: DCAP608
COURSE TITLE: Real Time Systems

Date of Exam: 1 March **Session 09:30-12:30**
Time Allowed: 3 hours **Max. Marks: 80**

1. *This paper contains 10 questions divided in two parts on 1 page.*
2. ***Part A is compulsory.***
3. ***In Part B (Questions 2 to 10), attempt any 6 questions out of 9. Attempt all parts of the questions chosen.***
4. *The marks assigned to each question are shown at the end of each question in square brackets.*
5. *Answer all questions in serial order*.
6. The student is required to attempt the question paper in ***English medium only.***

PART-A

Q1.

a. Define real time system.

b. What do you mean by deadline point?

c. What is multirate system?

d. What is the difference between absolute temporal consistency and relative temporal consistency?

e. Define release time.

f. What do you mean by jitter?

g. What is aperiodic job?

h. What do you mean by laxity?

i. What is the significance of scheduler?

j. What is the usage of acceptance test in job scheduling? (10x2=20)

PART-B

Q2. Explain the differences between soft real time systems and hard real time systems with proper examples and illustrations.

Q3. Explain the functioning of a digital controller in details with diagram.

Q4. Explain the concepts of Deadbeat Control and Kalman Filter with equations.

Q5. Explain and illustrate the architecture of air traffic control system.

Q6. What is the difference between Round-robin approach and weight Round-robin Approach?

Q7. Explain different types of functional parameters for real time systems with example.

Q8. Explain the detail concept of hierarchical scheduling with example.

Q9. Explain the concept of effective release time and effective deadline with an example of job scheduling.

Q10. “Average response time of aperiodic jobs can be improved by slack stealing”. Explain with example.
(6x10=60)