

COURSE CODE: DCAP608
COURSE TITLE: REAL TIME SYSTEMS

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 selected question.***
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) What do you mean by real time databases? [2]
(b) What do you know about Soft and Hard Real Time System? [2]
(c) What do you understand by resources used in Reference Model of Real Time? [2]
(d) Define job resource parameter. [2]
(e) Differentiate between Round-robin approach and Weighted Round-robin approach. [2]
(f) Distinguish between off-line and on-line scheduling. [2]
(g) What are the uses of cyclic executive in scheduling? [2]
(h) What is the acceptance test? [2]
(i) What is Priority Scheduling? [2]
(j) Define critical instants. [2]

PART-B

- Q2. What are the high level controls in real time systems? Explain in detail. [10]
Q3. How many algorithms are used to find the release time? Explain any two of them. [10]
Q4. Differentiate between precedence graph and task graph. Also discuss in detail precedence constraints and data dependency. [10]
Q5. Explain the importance of conditional process graph with relevant diagrams. [10]
Q6. What are Clock-driven approach and its algorithms? Describe in detail. [10]
Q7. Discuss the term optimality of the EDF and LST algorithms in detail. [10]
Q8. What are the notations and assumptions for clock driven scheduling? Also explain the roles of frames and major cycles. [10]
Q9. How can you improve the Average response time of aperiodic jobs? Explain. [10]
Q10. Compare Fixed-Priority versus Dynamic-Priority Algorithms in detail. [10]