

Mid-West University
Examinations Management Office
Surkhet, Nepal
End Semester Examinations -2078

Bachelor level/ B.Sc CSIT /7th Semester

Time: 3 hrs

Subject : Real Time System (COM472)

Full Marks : 60

Pass Marks : 30

Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.

GROUP “A”

Very short answer questions (attempt all)

[8 x 2 = 16]

1. Define controller in real time system?
2. What do you mean by laxity?
3. List out timing constraints of real time system.
4. What is ATC?
5. Define gating and association.
6. Define inheritance.
7. What is PSOS?
8. Define the condition when resource conflict appears.

GROUP “B”

Short answer questions (attempt any five)

[5 x 4 = 20]

9. Differentiate between Linux and RT Linux with example.
10. State jobs and processors of real time system.
11. Explain the following:
 - a. Release time
 - b. Deadline
 - c. Timing constraint
 - d. Response time
12. Explain high level control with example.
13. What are the assumption considered in priority-driven scheduling of periodic task?
14. Schedule the following tasks with rate monotonic algorithm:

$T1 = (4,1);$

$T2 = (5,2);$

$T3 = (20,5)$

GROUP “C”

Long answer questions (attempt any three)

[3 x 8 = 24]

15. What do you mean by clock driven approach of scheduling? How it works? Explain.
16. What are the different parameters of the real time work load?
17. What do you mean by priority ceiling protocol algorithm? Schedule the following jobs with priority ceiling protocol algorithm with given conditions:

Job	r_i	e_i	Priority (π_i)	Resource
J1	7	3	1	NCS - 1, CS TYPE1 - 1, NCS - 1
J2	5	3	2	NCS - 1, CS TYPE2 - 1, NCS - 1
J3	4	2	3	NCS - 2
J4	2	6	4	NCS - 1, CS TYPE1 -2, CS TYPE2 – 1, CS TYPE1 –1, NCS - 1
J5	0	6	5	NCS - 1, CS TYPE2 -4, NCS - 1

18. Explain different approaches of scheduling aperiodic jobs with example.

THE END