YMCA UNIVERSITY OF SCIENCE AND TECHNOLOGY, FARIDABAD
B.TECH EXAMINATION (UNDER CBS)
Computer Based Instrumentation Control (EIC-308)

Time: 3 hrs   M.Marks:60

NOTE: PART- A is compulsory and in PART- B, four questions out of six has to be attempted.
Assume relevant data/fig., if not provided.

PART- A (All the questions in this part are compulsory)

Q.1(a) What is the need of modelling?   (2)

(b) How optimal control and performance monitoring of system can be insured   (2)
simultaneously?

(c) Write down advantage of simulation.   (2)

(d) What do you mean by automation?   (2)

(e) Give one example of Ratio controller.   (2)

(f) What are the instructions for flow control operations?   (2)

(g) What are applications of PLCs in hazardous situation?   (2)

(h) What is the use of dual computer?   (2)

(i) State different types of Data Communication scheme. Give example of each.   (2)

(j) Implement X-OR condition using ladder logic .   (2)

PART-B (Attempt any FOUR questions)

Q.2(a) Differentiate between classical approach and computer based plant automation.   (05)

Q.2(b) What is the necessity and function of computers in power plant automation? Can any   (05)
operation be fully unmanned? Defend your answer.

Q.3(a) Why multiplexing is needed? How effective multiplexing is done?   (05)

Q.3(b) Explain any three D/A converters.   (05)

Q.4(a) Explain the building blocks of automatic system.   (05)

Q.4(b) Differentiate between velocity and position algorithm. Explain any one algorithm.   (05)

Q.5(a) Explain basic requirements for the selection of electrical and non-electrical   (05)
transducers.

Q.5(b) Explain mini and micro-computer with their relative examples, application areas,   (05)
advantages and disadvantages.

Q.6(a) What is the need of mathematical modelling and simulation? What are the essential   (05)
measures have to take into for effective modelling? What are the barriers, due to
which effective modelling can't be done?

Q.6(b) Explain block diagram of PLC and explain in details the different building blocks of   (05)
it.

Q.7 Explain in detail the plant automation of the following two:-   (10)
(a). water treatment plant (b). steel plant