

B.E. Seventh Semester (Elect Engg (E & P), Ele and Electro, Ele & Power, Ele. Energy) (CGS)

10461 : Elective - I : Process Control System

7 EE 05 / 7 EP 05 / 7 EL 05 / 7 EX 05

P. Pages : 2

Time : Three Hours



AU - 2907

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Diagrams and equations should be given wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.

SECTION - A

1. a) Explain the operation of a vector voltmeter with neat block diagram. Give its applications. 7
b) Explain the working of vector impedance meter circuit for measurement of phase angle. 7

OR

2. a) Explain how a Q-meter can be used to measure the following. 8
i) HF resistance of a coil,
ii) Stray capacitance and
iii) Impedance of a circuit.
b) Give the applications of Electronics multimeter. 6
3. a) Draw the block diagram and explain Audio-range wave analyser. 7
b) Explain in detail a swept frequency generator (sweeper). 6

OR

4. a) Explain various applications of a wave analysers. 6
b) Explain with waveforms, displayed using spectrum analysers. 7
i) Continuous wave signal, ii) Amplitude modulation
iii) Frequency modulation & iv) Pulse modulation

5. a) Explain Binary counter in detail. 6
b) Explain with a block diagram the operation of a digital storage CRO. 7

OR

6. a) Explain Decimal counter in detail. 6
b) Explain strip chart recorder. 7

SECTION – B

7. a) Explain the modulation and demodulation of a signal with example. 7
b) Explain the weighted resistor digital to analog converter. 6

OR

8. a) Explain the Band pass filter using OP-AMP. 6
b) Explain in detail ramp type Analog to digital conversion technique. 7
9. a) Explain serial and parallel digital data conversion system. Justify the conversion system which is beneficiary to transmit the signal. 6
b) Explain the operation of a Time Division Multiplexing system. 7

OR

10. a) Explain the terms 6
i) MODEM and ii) UART.
b) Explain the position telemetry system. 7
11. a) Explain in detail 7
i) Fixed I/O PLC's and
ii) Modular I/O PLC's
b) Explain in detail ladder diagram with one example. 7

OR

12. a) Explain program sequence execution by a PLC. 7
b) Explain PLC hardware components. 7
