SC

SEAT No._____

[424A-177] SARDAR PATEL UNIVERSITY No. of Printed Pages : 3

B. Sc (6th Semester)

US06CELE-04

Instrumentation Paper II

02/04/2018, Monday
10:00 am to 1:00 pm
Total Marks 70

Q.1 Multiple Choice Questions: **10**

1. An emitter follower circuit or source follower circuit is
   - (i) very high gain amplifier
   - (ii) very low gain amplifier
   - (iii) Unity gain amplifier
   - (iv) None of the above

2. Complex waveforms are most accurately measured by
   - (i) average responding voltmeter
   - (ii) true rms responding voltmeter
   - (iii) direct responding voltmeter
   - (iv) indirect responding voltmeter

3. The output voltage of heater element of thermocouple is directly proportional to
   - (i) squareroot of rms value of input signal.
   - (ii) square of rms value of input signal
   - (iii) double of rms value of input signal.
   - (iv) cube of rms value of input signal.

4. In successive approximation voltmeter the comparison for ac voltage takes place when SH circuit is in
   - (i) sample mode
   - (ii) hold mode
   - (iii) closed mode
   - (iv) open mode

5. The digital voltmeter capable of 1000 readings per second uses
   - (i) ramp type DVM
   - (ii) successive approximation voltmeter
   - (iii) continuous balance DVM

(P.T.O.)

(iv) Integrating type DVM

6. Which instrument is used to measure electrical properties of coils and capacitor?
   (i) Amplified dc meter
   (ii) Ramp type DVM
   (iii) Q-meter
   (iv) Successive Approximation Voltmeter

7. The stylus (Pen) consist of a ----------wire moving across the aluminium surface.
   (i) Copper
   (ii) Tungsten
   (iii) Nichrome
   (iv) Aluminium

8. Photo sensitive chart paper is used for ---------- writing in strip chart recorder.
   (i) Optical
   (ii) Electrical
   (iii) Thermal
   (iv) None of the above

9. In IEEE 488 system the frequency counter is
   (i) Talker instrument
   (ii) Listener instrument
   (iii) Both (i) and (ii)
   (iv) None of the above

10. The IEEE 488 standard is based on the transmission of ------bit data bus
   (i) 16
   (ii) 8
   (iii) 32
   (iv) 4

Q. 1 Answer any **Ten** questions in short. 20

1. What is principle of True RMS responding voltmeter?
2. Why MOSFET are most successful choppers?
3. Draw circuit of True RMS responding voltmeter?
4. What is use of SH circuit? Draw its circuit.

5. What is Q meter used for?
6. List the names of Digital Voltmeters you know.
7. Explain briefly Thermal writing
8. What do you mean by recorders? How many types of recorders you know?
9. Draw diagram of X-Y recorders?
10. Which three components are required for computer controlled test system?
11. Write names of eight different interface or status lines.
12. What is IEEE 488 system?

Q.3 Explain in detail working of True RMS responding voltmeter. 10

OR

Q.3 Describe in detail amplified DC meter. 10

Q. 4 Obtain expression for various components using series connection method of Q meter. 10

OR

Q.4 Describe in detail working Ramp type DVM 10

Q.5 Name the recorders you know. Discuss in detail Magnetic recorders. 10

OR

Q.5 Explain fully Strip Chart Recorder. 10

Q.6 State functions of eight interface or status lines of IEEE 488 system. 10

OR

Q.6 Give detail account of how audio amplifier is tested using Automatic Test Equipment. 10