



J-0843
Second Year B. Sc. Examination
March / April – 2013
Electronics : Paper - V
(Industrial Electronics)

Time : Hours]

[Total Marks : 70

Instructions :

(1)

<p>नीचे दृष्टविक \leftarrow निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of \leftarrow signs on your answer book.</p> <p>Name of the Examination : <input style="width: 90%;" type="text" value="S. Y. B. Sc."/></p> <p>Name of the Subject : <input style="width: 90%;" type="text" value="Electronics : Paper - 5"/></p> <p>Subject Code No. : <input style="width: 20px;" type="text" value="0"/> <input style="width: 20px;" type="text" value="8"/> <input style="width: 20px;" type="text" value="4"/> <input style="width: 20px;" type="text" value="3"/> Section No. (1, 2,.....) : <input style="width: 40px;" type="text" value="Nil"/></p>	<p>Seat No. : <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; height: 80px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
---	---

- (2) Figures on the right indicate full marks.
- (3) All symbols and abbreviations have their usual meaning.
- (4) Non-programmable calculators are allowed.
- (5) Q.1 is compulsory.
- (6) Assume data if necessary.
- 1 Write very short answer. 14
- (a) State any two application of a strain gauge transducer.
- (b) Draw the block diagram of power supply and label each part.
- (c) What component values are measured by A.C. bridges ?
- (d) Compare relative and absolute error.
- (e) What is Solar Cell ?
- (f) Draw the circuit of a Zener Regulator.
- (g) Draw the Characteristics of SCR.
- 2 (a) Draw the basic circuit of three terminal regulator. 7
Explain its operation under different fault modes.
- (b) Enlist the application of a three terminal regulator. 7
Draw the circuit arrangement of adjustable output voltage.

OR

- (a) Discuss the Zener Regulator. 7

- (b) Draw a neat block diagram of feedback regulator and explain the process of regulation in this regulator. 7
- 3 (a) What is an error in an (measuring device) instrument ? Discuss different types of error with suitable examples. 7
- (b) The two resistance have following ratings $R_1=47$ ohms $\pm 10\%$ and $R_2=68$ ohms $\pm 5\%$, Calculate (i) the magnitude of error in each resistor. (ii) The limiting error in ohms and in percent when the resistor are connected in series. 7

OR

- (a) Discuss the application of three terminal fixed regulator. 8
- (b) Design a dual regulated power supply using a three terminal fix voltage, 12v-0-12v output voltage. 6
- 4 (a) Explain between active and passive transducer. Explain inductive transducer in detail. 8
- (b) A resistance wire of strain gauze uses a soft iron wire of small diameter. The gauze factor of 4.2. Neglecting the piezoelectric effects, calculate the Poission's ratio. 6

OR

- (a) State the difference between oscillator and an inverter. Explain the working of McMurray inverter with the help of necessary diagram. 8
- (b) A series of inverter has on output frequency of 50 Hz. The time gap between the turn off of one SCR and turn on of the other SCR is 20 m sec, calculate (1) Time period of oscillation. (2) Resonance Frequency. 6
- 5 Write short notes. (on any two) 14
- (a) Thermo couple.
- (b) Un-interrupted power supply.
- (c) Strain Gauze.
- (d) Method of Battery charging.