



A-3003
Second Year B. Sc. (Sem. III) Examination
March/April – 2015
Electronics (E for CS) Paper - III
(Electronic Devices & Circuits)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

<p>नीचे दर्शायेव निशानीवाणी विगतो उत्तरवही पर अवश्य कर्जवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : S. Y. B. SC. (SEM. 3)</p> <p>Name of the Subject : ELECTRONICS (E FOR CS) PAPER - III</p> <p>Subject Code No. : 3 0 0 3 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <p style="text-align: center;">Student's Signature</p>
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- (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 Answer in brief 2×7 =14
- (a) What is Gain w.r.t amplifier? Give its unit.
(b) What are criteria for Oscillation?
(c) Draw a basic ac amplifier circuit using BJT
(d) Draw the FEEDBACK PAIR circuit and its application.
(e) Give full form of BJT & JFET.
(f) Give full form of MOSFET and CMOS
(g) Draw the Darlington Pair circuit and its application.
- 2 (a) In a simple tuned amplifier, the circuit bandwidth is 4 kHz and the voltage gain is a maximum value at 200kHz, when the tuning, capacitor is adjusted to 470pF. Find quality factor of the circuit and inductance of the coil. 6
- OR**
- (a) Explain LC Oscillator in detail. 6
(b) Explain h-parameter model detail 6

OR

- (b) Draw an elementary JFET amplifier, which has $g_m = 2000$ siemen, $r_d = 80k\Omega$ and $R_L = 8k\Omega$. Calculate Voltage Gain. **6**
- 3** (a) Difference between positive feedback and Negative feedback amplifier. Mention also their advantages. **6**
- OR**
- (a) Explain Thermal –Run away. What is to be done to avoid Thermal run-away in BJT amplifier? **6**
- (b) What is Piezoelectric effect? What are the advantages of Crystal Oscillator than other available oscillator. **6**
- OR**
- (b) What is a by-pass capacitor in BJT biasing circuit design and how it Stabilizes the Bias condition? **6**
- 4** Write short Notes on any Two : **6×2=12**
- (a) Hybrid model for small signal transistor
- (b) Voltage Negative feedback
- (c) Single Stage RC Coupled amplifier
- (d) UJT oscillator.
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