



A-2990
Second Year B. Sc. (Sem. III) Examination
March / April - 2015
Electronics : Paper - III
(Electronic Circuits & Applications)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

<p>नीचे दृशवित्त निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination :</p> <p>☛ Second Year B. Sc. (Sem. III)</p> <p>Name of the Subject :</p> <p>☛ Electronics - III (Electronic Circuits & Applications)</p> <p>☛ Subject Code No. : 2 9 9 0 ☛ Section No. (1, 2,.....) : NIL</p>	<p>Seat No. :</p> <table border="1" style="width: 100%; height: 20px;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; margin-top: 10px;">Student's Signature</div>						

- (2) Q.1 is compulsory.
- (3) Figures at extreme right indicate full marks.
- (4) Draw figures/diagrams to support your answer.
- (5) Assume data if required.

1 Write very short answers :

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1. What three factors cause instability in transistor amplifier circuit ?
2. Draw the fixed base bias circuit and describe its limitations.
3. What is the main disadvantage of negative feedback ?
4. What is reverse leakage current ? How does it contribute for instability in transistor biasing circuit ?
5. Give the typical h-parameter values of common emitter circuit.
6. Draw the approximate h-parameter model for a transistor.
7. Draw the frequency response curve of a transistor with proper x-axis and y-axis labels.

- 2 (A) What is the need for transistor stabilization? Explain the most stable transistor biasing circuit. 6
- (B) Define the four h-parameters of an amplifier circuit. Draw the h-parameter circuit for the transistor in common base configuration. 6
- OR**
- (A) What is negative feedback? Draw and discuss the current feedback amplifier circuit. 6
- (B) What impact does negative feedback make on the bandwidth of the amplifier ? 6
- 3 (A) Discuss the RC coupled CE amplifier and derive expressions for A_i and A_v 6
- (B) Draw and explain the frequency response curve of the amplifier. Explain how is the bandwidth calculated from the frequency response curve. 6
- OR**
- (A) What is the impact of negative feedback on input and output resistance of the amplifier, gain and the bandwidth of the amplifier. 6
- (B) Discuss the emitter-follower amplifier. 6
- 4 Write Short Notes (Any Two). 12
1. Transformer coupled amplifier
 2. Effect of coupling and bypass capacitor on amplifier
 3. Bias compensation
 4. Limitations of collector feedback circuit.
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