



UF-6125
B. E. III (Sem. III) (CHE) Examination
May/June – 2012
Basic Electronics

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

<p>नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य लखवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B. E. III (Sem. III) (CHE)</p> <p>Name of the Subject : Basic Electronics</p> <p>Subject Code No. : 6 1 2 5 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> <div style="border: 1px solid black; border-radius: 15px; height: 60px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
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- (2) Attempt all questions.
(3) Figures to the right indicate full marks.
(4) Assume suitable data wherever necessary.

- 1 (a) Give the answers of the following. 10
- (1) A PN junction acts as a _____. (unidirectional, bidirectional)
- (2) The ripple factor of a half wave rectifier is _____. (0.48, 2, 1.21, 2.5)
- (3) Find the value of β if $\alpha = 0.9$.
- (4) Define (i) positive feedback and (ii) negative feedback.
- (5) Emitter or transistor is _____ doped and collector is _____ doped.
- (b) Explain the output and input characteristics of 7
transistor with diagram.
- (c) Power supply X delivers 10V dc with a ripple factor 3
of 0.5V r.m.s. while the power supply Y delivers 25V dc with
a ripple of 1 mV r.m.s. Which is better power supply ?

- 2 (a) What is filter ? Explain π filter with circuit diagram, input and output waveform. 6
- (b) Explain push pull amplifier with circuit diagram and its operation. 9

OR

- 2 (a) Explain half wave rectifier with its circuit diagram & operation. Also derive expression for its efficiency. 10
- (b) Class B power amplifier in detail. 5
- 3 Explain any three. 15
- (1) V-I characteristics of diode.
- (2) Full wave bridge rectifier with circuit diagram.
- (3) Compare CC, CE and CB configuration.
- (4) N-type and P-type semiconductor.
- (5) UJT characteristics with diagram.

- 4 (a) Answer the following. 5
- (1) Explain Barkhausen criteria.
- (2) How does SCR differ from ordinary rectifier ?
- (3) _____ is the most stable oscillator.
- (4) Define electron emission.
- (5) Define sensitivity.
- (b) Explain the characteristics of Diodes with diagram. 6
- (c) Explain RTD. 4

- 5 (a) Explain the working of CRT with neat diagram. 8
- (b) Explain Wien bridge oscillator. 7

OR

- 5 (a) What do you mean by thermionic emission ? Explain Richardson-Dushman equation. 8
- (b) Explain phase shift oscillator. 7

6 Write short notes on any four.

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- (1) Application of UJT.
 - (2) Multimeter.
 - (3) Strain Gauge.
 - (4) Photoconductive cell.
 - (5) Solar cell.
 - (6) LVDT.
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