



B.E /B.TECH DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2009)

Third Semester

EEE251: BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to AERO&TXT)

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- Mention the equivalent capacitance when two capacitors C_1, C_2 connected in parallel.
 - $C_{eq} = C_1 + C_2$
 - $C_{eq} = C_1 + C_2 / C_1 C_2$
 - $C_{eq} = C_1 C_2 / C_1 + C_2$
 - None of the above
- Denote the Product of the RMS voltage and complex conjugate of the RMS of phasor current.
 - Complex power
 - Apparent power
 - True power
 - Reactive power
- State the condition for Maximum Torque
 - $R_2 = sX_2^2$
 - $R_2 = X_2$
 - $R_2 = sX_2$
 - $X_2 = R_2$
- Starting torque of DC-series motor will be
 - High
 - Low
 - Moderate
 - None of the above
- What impurity is added to N type semi-conductor?
 - Trivalent
 - Pentavalent
 - Metallic
 - Hexavalent
- Mention the device that functions in photoconductive mode in the third quadrant of its current-voltage characteristics, including the short-circuit condition acting as a current source.
 - Phototransistor
 - Opto coupler
 - Photodiode
 - LED
- In a non-inverting amplifier, the output voltage changes
 - In the opposite direction as the input voltage
 - In the same direction as the input voltage
 - In the opposite direction as the input current
 - In the opposite direction as the output voltage current

(OR)

b) Classify and brief the single phase induction motor with starting methods.

23. a) (i) Elucidate the operation of PN Junction Diode? (8)
(ii) Brief the working of Zener diode? (6)

(OR)

b) Describe the Characteristic of Common Base (CB) Transistor?

24. a) Describe with neat sketch the working of Half wave and Full wave Rectifier?

(OR)

b) Explicate Inverting and Non-Inverting amplifiers with suitable applications

25. a) Design Full adder with Truth table and specify the expression

(OR)

b) Describe JK, Master slave, D and T type flip-flops?
