**Reg. No. :** | | | | | | | | | | |
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## Question Paper Code: 35503

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fifth Semester

Electronics and Instrumentation Engineering

01UEI503 – INDUSTRIAL ELECTRONICS

(Regulation 2013)

Duration: One hour                                                            Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. For very high and ultra high frequency applications which of the following is preferred

    (a) SIT              (b) IGBT              (c) MOSFET              (d) BJT

2. Power MOSFET is a
    (a) Voltage controlled device          (b) Current controlled device
    (c) Frequency controlled device          (d) None of the above

3. The converter that can operate in both 3 phase and 6 phase is

    (a) 6 phase full converter          (b) 6 phase semi converter
    (c) 3 phase full converter          (d) 3 phase semi converter

4. Maximum power is transferred when load impedance is

    (a) equal to zero
    (b) equal to source resistance
    (c) equal to half of the source resistance
    (d) none of the above

5. A single phase full bridge inverter can be operated in load commutation mode in case load consist of

    (a) RL              (b) RLC underdamped
    (c) RLC over damped              (d) RLC critically damped

6. Dot conversion in coupled circuits is used

   (a) to determine the polarity of the self induced voltage in coils
   (b) to determine the polarity of the mutually induced voltage in coils
   (c) to measure the mutual inductance
   (d) to measure the mutual inductance

7. The time constant of a series RC circuit is

   (a) R/C            (b) $e^{-RC}$          (c)1/RC          (d)RC

8. Inductor does not allow sudden changes

   (a) in voltages                 (b) in currents
   (c) in both (a) & (b)         (d) none of the above

9. Which of the following is used in heat sink

   (a) iron          (b) aluminium          (c) silver          (d) carbon

10. An SMPS circuit operating at 20 *kHZ* to 100 *kHZ* range uses which of the following elements

    (a) Thyristor         (b) TRIAC         (c) UJT         (d) MOSFET

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11.    Describe about the characteristics of power devices in detail.
         (i)  SCR               (ii) IGBT                               (8)

12.    Analyze the three phase fully controlled converter with necessary circuit diagram and waveforms.                      (8)

13.    Discuss the series and parallel inverter in detail.           (8)

14.    Illustrate regenerative and dynamic braking of DC motor.        (8)

15.    Discuss the operation of UPS with neat block diagram.         (8)

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