

Code No: 56010

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., II Mid-Term Examinations, April - 2014

POWER SEMICONDUCTOR DRIVES

Objective Exam

Name: _____ Hall Ticket No.

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. In single PWM, the maximum pulse width can be varied _____ []
a) 0 to 360 degrees b) 0 to 180 degrees c) 0 to 90 degrees d) 0 to 60 degrees
2. The stator voltage control can be achieved by using _____ []
a) DC chopper b) controlled rectifier c) AC voltage controller d) step down cyclo-converter
3. In V/f method, the maximum torque is _____ []
a) Decreases b) increases c) constant d) zero
4. In a static scherbius drive, if the firing angle of the inverter is 165° , the value of slip is ___ []
a) Zero b) 0.5α c) 0.966α d) Infinite
5. Which of the following drive is more reliable []
a) Voltage Source Inverter fed b) Current Source Inverter fed
c) Cyclo-converter fed d) all the above
6. How to measure the speed of an induction motor in closed loop system []
a) Brushes b) Wattmeter c) Tacho-generator d) Multimeter
7. Which device is suitable for fan control application []
a) Power transistor b) Power Diode c) Triac d) Zener diode
8. A special case of plugging occurs when an induction motor connected to positive sequence voltage is driven by an active load in the reversing direction []
a) Quadrant IV b) Quadrant III c) Quadrant II d) Quadrant I
9. In motoring operation, (V/f) ratio is increased at []
a) High frequency b) High flux c) Low frequency d) Low flux
10. In general, Frequency of rotor currents = Frequency of supply voltage when []
a) Slip = 0 b) Slip = 0.5 c) Slip = 1 d) Slip = -1

Cont.....2

II Fill in the blanks

11. The Slip Power Recovery refers to control of _____ Induction motor.
12. The main drawback of stepped wave inverter is _____ in output voltage at low frequencies.
13. In static Kramer drive, motor turns ratio is 0.6, $\alpha = 120^\circ$. Then the motor slip is _____
14. The speed of wound rotor Induction Motor in a Static Kramer drive is controlled by _____
15. The stator to rotor turns ratio of an Induction Motor is generally _____
16. In cranes and Lifts _____ type of motor is used
17. For an induction motor s is slip, f_s is the stator frequency then rotor frequency $f_r =$ _____
18. The speed of induction motor, whose slip is 0.4 and synchronous speed is 1000rpm is _____
19. The torque is positive but the speed is negative, so _____ torque appears as breaking torque
20. By using AC voltage controller, _____ can be fixed

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11. The speed of wound rotor Induction Motor in a Static Kramer drive is controlled by _____
12. The stator to rotor turns ratio of an Induction Motor is generally _____
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