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S. Y. B. Sc. (Electronics) (Sem. - III) Examination

March - 2023

Electronics : Paper - V

Linear Power Electronics

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. **Fill up strictly the details of ☛ signs on your answer book** Name of the Examination: ☛ **S. Y. B. Sc. (Electronics) (Sem. - III)** Name of the Subject : ☛ **Electronics : Paper - V Linear Power Electronics** Subject Code No.: **1903000203020093**	Seat No.: Student's Signature

(2) All questions are compulsory.

***O.M.R. Sheet* ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ *O.M.R. Sheet*ની પાછળ છાપેલ છે.**
Important instructions to fillup O.M.R. Sheet are given on back side of the provided O.M.R. Sheet.

Q. 1. Special diodes designed to conduct in the reverse direction are called _____ diodes.

A) Zener
B) Varactor
C) LED
D) Switching

Q. 2. Providing a constant output regardless of ac input or load resistance changes is the function of a

A) Transformer
B) Filter
C) Regulator
D) Rectifier

Q. 3. A switching regulator is considered

A) Quiet
B) Noisy
C) Inefficient
D) Linear

Q. 4. Ripple factor of center tapped full wave rectifier is _____.

A) 1.414
B) 1.21
C) 1.3
D) 0.48

Q. 5. Which of the following is considered as three-pin voltage regulator ICs?

A) Voltage regulators which are adjustable
B) Fixed voltage regulator
C) Both A and B
D) None

Q. 6. Voltage regulators require

A) Only line regulation
B) Only load regulation
C) A constant load
D) Load and line regulation

Q. 7. What type of regulators offer inherent short-circuits protection?

A) Shunt regulators
B) Series regulators
C) Three-terminal regulators
D) Switching regulators

Q. 8. Voltage regulators keep a constant _____ output voltage when the input or load varies within limits.

A) DC
B) AC
C) Ripple
D) None

Q. 9. Switching regulators are series type regulators, which has _____ power dissipation and _____ efficiency.

A) Increased, increased
B) Increased, reduced
C) Reduced, reduced
D) Reduced, increased

Q. 10. The output voltage of a regulated power supply is affected by which of the following factors

A) Input voltage
B) Load current
C) Temperature
D) All the above

Q. 11. A fixed voltage regulator can be a _____.

A) Positive voltage regulator
B) Negative voltage regulator
C) Positive or negative voltage regulator
D) None of the above

Q. 12. A diode for which you can change the reverse bias, and thus vary the capacitance is called

A) Varactor diode
B) Tunnel diode
C) Zener diode
D) Switching diode

Q. 13. In a power supply diagram which block indicated the smooth dc output?

A) Filter
B) Transformer
C) Regulator
D) None of the above

Q. 14. In an unregulated power supply, if input a.c. voltage increases, the output voltage

A) Increases
B) Decreases
C) Remains the same
D) None of the above

Q. 15. A Zener diode utilises _____ characteristic for voltage regulation.

A) Forward
B) Reverse
C) Both forward and reverse
D) None of the above

Q. 16. Zener diode can be used as _____.

A) Ac voltage regulator only
B) Dc voltage regulator only
C) Both dc and ac voltage regulator
D) None of the above

Q. 17. A Zener diode is used as a _____ voltage regulating device.

A) Shunt
B) Series
C) Series-shunt
D) None of the above

Q. 18. Another name for Zener diode is _____ diode.

A) Breakdown
B) Voltage
C) Power
D) Current

Q. 19. In a Zener voltage regulator, the changes in load current produce changes in

A) Zener current

B) Zener voltage

C) Zener voltage as well as Zener current

D) None of the above

Q. 20. A Zener voltage regulator will cease to act as a voltage regulator if Zener current becomes

A) Less than load current

B) Zero

C) More than load current

D) None of the above

Q. 21. A Zener regulator _____ in the power supply.

A) Increases the ripple

B) Decreases the ripple

C) Neither increases nor decreases the ripple

D) Data insufficient

Q. 22. Thermal shutdown occurs in an IC regulator if

A) Power dissipation is too high

B) Internal temperature is too high

C) Current through the device is too high

D) None

Q. 23. Testing a good diode with an ohmmeter should indicate

A) High resistance when forward or reverse biased

B) Low resistance when forward or reverse biased

C) High resistance when reverse biased and low resistance when forward biased

D) High resistance when forward biased and low resistance when reverse biased

Q. 24. The 79XX series of voltage regulators produces an output voltage that is

A) Negative
B) Positive
C) Either Positive or negative
D) Unregulated

Q. 25. A shunt regulator is inefficient because

A) It wastes power
B) It uses a series resistor and a shunt transistor
C) The ratio of output to input power is low
D) All of the above

Q. 26. A series regulator is more efficient than a shunt regulator because

A) It has a series resistor
B) It can boost the voltage
C) The pass transistor replaces the series resistor
D) It switches the pass transistor on and off

Q. 27. Why is heat produced in a diode?

A) Due to current passing through the diode
B) Due to voltage across the diode
C) Due to the power rating of the diode
D) Due to the PN junction of the diode

Q. 28. Which of the following circuits would require the least amount of filtering?

A) A half-wave rectifier
B) A full-wave rectifier
C) A bridge rectifier
D) A full-wave rectifier and a bridge rectifier

Q. 29. The regulator with the highest efficiency is the

A) Shunt regulator
B) Series regulator
C) Switching regulator
D) Dc-to-dc converter

Q. 30. Several cells in the series form a

A) Power supply
B) Battery
C) Thermocouple
D) Charger

Q. 31. The chemical energy in a battery or cell

A) Is a form of kinetic energy
B) Cannot be replenished once it is gone
C) Changes to kinetic energy when the cell is used
D) Is caused by electric current

Q. 32. In a power supply diagram, which block indicates a pulsating dc output?

A) Transformer
B) Filter
C) Rectifier
D) Regulator

Q. 33. The average value of the half-wave rectified output voltage is approximately _____ of Vp

A) 31.8%
B) 63.6%
C) 70.7%
D) 100%

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