

**D****DF-2992****Second Year B. Sc. (Sem. III) Examination****March / April - 2016****Electronics : Paper - V****(Linear Power Electronics)**

Time : Hours]

[Total Marks : 50

**Instructions :**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="SECOND YEAR B. Sc. (SEM. 3)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="ELECTRONICS - 5"/>	<input type="text"/>
Subject Code No. : <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value="9"/> <input type="text" value="2"/>	<input type="text" value="1,2,3"/>
Section No. (1, 2,.....) :	
	Student's Signature

- (2) This exam contains 28 multiple choice questions.
- (3) Choose only ONE most appropriate answer per question.
- (4) Do not crease or fold the answer sheet.
- (5) All symbols and abbreviations have their usual meaning.
- (6) Non-programmable calculators are allowed.
- (7) Assume data if necessary.

**Q. 1 to 12 Multiple choice questions : (1 mark)****Q. 13 to 22 Multiple Choise Questions : (2 marks)****Q. 23 to 28 Multiple Choice Questions : (3 marks)**

*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  
is given on back side of the provided O.M.R. Sheet.*

- 1 The diode schematic arrow points to the
  - (A) positive axial lead
  - (B) anode lead
  - (C) cathode lead
  - (D) trivalent-doped material
  
- 2 The form factor for half wave rectified sine wave is
  - (A) 1.11
  - (B) 1.44
  - (C) 1.57
  - (D) 1.0
  
- 3 The device or circuit used for conversion of A.C. into D.C. is called
  - (A) An amplifier
  - (B) Filtering circuit
  - (C) Converter
  - (D) A rectifier
  
- 4 The alternating voltage is an example of
  - (A) Discrete waveform
  - (B) An analogue waveform
  - (C) None of all
  - (D) A digital waveform

- 5 A filtered full-wave rectifier voltage has a smaller ripple than does a half-wave rectifier voltage for the same load resistance and capacitor values because :
- (A) there is a longer time between peaks
  - (B) the larger the ripple, the better the filtering action
  - (C) none of these
  - (D) there is a shorter time between peaks
- 6 A pn junction allows current flow when
- (A) the n-type material is more positive than the p-type material
  - (B) the p-type material is more positive than the n-type material
  - (C) there is no potential on the n-type or p-type materials
  - (D) both the n-type and p-type materials have the same potential
- 7 With full-wave rectification, current through the load resistor must be
- (A) in the same direction
  - (B) from the reverse biased diode
  - (C) to the external load
  - (D) in opposite directions
- 8 DC power should be connected to forward bias a diode as follows :
- (A) – cathode, – anode
  - (B) + cathode, + anode
  - (C) + anode, – cathode
  - (D) –anode, + cathode

- 9 The 7912 voltage regulator produces an output voltage that is
- (A)  $-12\text{ V}$
  - (B)  $12\text{ V}$
  - (C)  $9\text{ V}$
  - (D)  $3\text{V}$
- 10 A voltage regulator has a ripple rejection of  $-60\text{ dB}$ . If the input ripple is  $1\text{V}$ , the output ripple is
- (A)  $-60\text{ mV}$
  - (B)  $10\text{ mV}$
  - (C)  $1000\text{ V}$
  - (D)  $1\text{mV}$
- 11 A series regulator is more efficient than a shunt regulator because
- (A) It can boost the voltage
  - (B) The pass transistor replaces the series resistor
  - (C) It switches the pass transistor on and off
  - (D) It has a series resistor
- 12 The energy in a cell or battery depends mainly on
- (A) The current drawn from it. (Cells and Batteries)
  - (B) Its voltage
  - (C) All of these
  - (D) Its physical size

- 13 In which of the following places would you most likely choose a lithium battery ?
- (A) A microcomputer memory backup
  - (B) A portable audio cassette player
  - (C) A rechargeable flashlight
  - (D) A two-way portable radio
- 14 A zener diode can be used to provide \_\_\_\_\_ in a power supply.
- (A) Voltage Regulation
  - (B) Voltage Amplification
  - (C) Current Amplification
  - (D) Current Regulation
- 15 The small amount of ac signal present on the output of a filtering network for a dc power supply is known as \_\_\_\_\_.
- (A) ripple
  - (B) trickle
  - (C) waffle
  - (D) pulsating dc
- 16 Transistor series voltage regulator has \_\_\_\_\_ and \_\_\_\_\_ as compared to other regulators with the input variations.
- (A) poor regulation and ripple suppression
  - (B) constant regulation and ripple suppression
  - (C) None of these
  - (D) strong regulation and ripple suppression
- 17 Special diodes designed to conduct in the reverse direction are called \_\_\_\_\_ diodes.
- (A) varactor
  - (B) LED
  - (C) switching
  - (D) zener

- 18 A fixed voltage regulator can be a \_\_\_\_\_
- (A) Negative voltage regulator
  - (B) Positive or negative voltage regulator
  - (C) Variable voltage regulator
  - (D) Positive voltage regulator
- 19 Alkaline cells :
- (A) Are generally better in radios than zinc-carbon cells
  - (B) Have higher voltages than zinc-carbon cells
  - (C) Have shorter shelf lives than zinc-carbon cells
  - (D) Are cheaper than zinc-carbon cells
- 20 Which of the following cell is not rechargeable ?
- (A) Silver oxide cell
  - (B) Fuel cell
  - (C) Ni-Cd cell
  - (D) Lead storage battery
- 21 In full-wave rectification the output D.C. voltage is obtained across the load for
- (A) The positive half cycles
  - (B) The complete cycle of A.C.
  - (C) Either positive or negative half of A.C.
  - (D) The negative half cycle of A.C.
- 22 A current booster is a transistor in
- (A) Series with the IC regulator
  - (B) Either series or parallel
  - (C) Shunt with the load
  - (D) Parallel with the IC regulator

- 23 The semiconductor diode can be used as a rectifier because\_\_\_\_\_.
- (A) It has low resistance to the current flow when forward biased.
  - (B) It has high resistance to the current flow when reverse biased
  - (C) Its conductivity increases with rise of temperature.
  - (D) It has low resistance to the current flow when forward biased and high resistance when reverse biased
- 24 The output equation for a series regulator is \_\_\_\_\_.
- (A)  $V_{out} = V_{zener} + V_{be}$
  - (B)  $V_{out} = I_{zener} - V_{be}$
  - (C)  $V_{out} = I_{zener} + V_{be}$
  - (D)  $V_{out} = V_{zener} - V_{be}$
- 25 The switching regulators can operate in
- (A) Step down
  - (B) Polarity inverting
  - (C) All the mentioned
  - (D) Step up

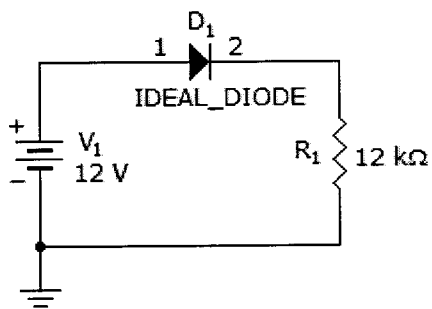
26 Filter used in switching regulator's are also as called

- (A) AC – DC transformers
- (B) DC transformer
- (C) AC transformer
- (D) DC – AC transformers

27 Which among the following act as a switch in switching regulator ?

- (A) Diode
- (B) Transistors
- (C) Relays
- (D) Rectifiers

28 What is the current through the diode ?



- (A) 0.975 mA
- (B) 0.942 mA
- (C) 0.0 mA
- (D) 1 mA