

**B****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 A voltage regulator has a ripple rejection of -60 dB. If the input ripple is 1V , the output ripple is
- (A) 1000 V
 - (B) 1mV
 - (C) -60 mV
 - (D) 10 mV
- 2 A series regulator is more efficient than a shunt regulator because
- (A) It switches the pass transistor on and off
 - (B) It has a series resistor
 - (C) It can boost the voltage
 - (D) The pass transistor replaces the series resistor
- 3 The energy in a cell or battery depends mainly on
- (A) All of these
 - (B) Its physical size
 - (C) The current drawn from it. (Cells and Batteries)
 - (D) Its voltage
- 4 The diode schematic arrow points to the
- (A) cathode lead
 - (B) trivalent-doped material
 - (C) positive axial lead
 - (D) anode lead

- 5 The form factor for half wave rectified sine wave is
- (A) 1.57
 - (B) 1.0
 - (C) 1.11
 - (D) 1.44
- 6 The device or circuit used for conversion of A.C. into D.C. is called
- (A) Converter
 - (B) A rectifier
 - (C) An amplifier
 - (D) Filtering circuit
- 7 The alternating voltage is an example of
- (A) None of all
 - (B) A digital waveform
 - (C) Discrete waveform
 - (D) An analogue waveform
- 8 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) none of these
 - (B) there is a shorter time between peaks
 - (C) there is a longer time between peaks
 - (D) the larger the ripple, the better the filtering action

- 9 A pn junction allows current flow when
- (A) there is no potential on the n-type or p-type materials
 - (B) both the n-type and p-type materials have the same potential
 - (C) the n-type material is more positive than the p-type material
 - (D) the p-type material is more positive than the n-type material
- 10 With full-wave rectification, current through the load resistor must be
- (A) to the external load
 - (B) in opposite directions
 - (C) in the same direction
 - (D) from the reverse biased diode
- 11 DC power should be connected to forward bias a diode as follows :
- (A) + anode, – cathode
 - (B) –anode, + cathode
 - (C) – cathode, – anode
 - (D) + cathode, + anode
- 12 The 7912 voltage regulator produces an output voltage that is
- (A) 9 V
 - (B) 3V
 - (C) –12 V
 - (D) 12 V

- 13 Transistor series voltage regulator has _____ and _____ as compared to other regulators with the input variations.
- (A) None of these
 - (B) strong regulation and ripple suppression
 - (C) poor regulation and ripple suppression
 - (D) constant regulation and ripple suppression
- 14 Special diodes designed to conduct in the reverse direction are called _____ diodes.
- (A) switching
 - (B) zener
 - (C) varactor
 - (D) LED
- 15 A fixed voltage regulator can be a _____
- (A) Variable voltage regulator
 - (B) Positive voltage regulator
 - (C) Negative voltage regulator
 - (D) Positive or negative voltage regulator
- 16 Alkaline cells :
- (A) Have shorter shelf lives than zinc-carbon cells
 - (B) Are cheaper than zinc-carbon cells
 - (C) Are generally better in radios than zinc-carbon cells
 - (D) Have higher voltages than zinc-carbon cells
- 17 Which of the following cell is not rechargeable ?
- (A) Ni-Cd cell
 - (B) Lead storage battery
 - (C) Silver oxide ceol
 - (D) Fuel cell

- 18 In full-wave rectification the output D.C. voltage is obtained across the load for
- (A) Either positive or negative half of A.C.
 - (B) The negative half cycle of A.C.
 - (C) The positive half cycles
 - (D) The complete cycle of A.C.
- 19 A current booster is a transistor in
- (A) Shunt with the load
 - (B) Parallel with the IC regulator
 - (C) Series with the IC regulator
 - (D) Either series or parallel
- 20 In which of the following places would you most likely choose a lithium battery ?
- (A) A rechargeable flashlight
 - (B) A two-way portable radio
 - (C) A microcomputer memory backup
 - (D) A portable audio cassette player
- 21 A zener diode can be used to provide _____ in a power supply.
- (A) Current Amplification
 - (B) Current Regulation
 - (C) Voltage Regulation
 - (D) Voltage Amplification
- 22 The small amount of ac signal present on the output of a filtering network for a dc power supply is known as _____.
- (A) waffle
 - (B) pulsating dc
 - (C) ripple
 - (D) trickle

23 The output equation for a series regulator is _____.

(A) $V_{\text{out}} = I_{\text{zener}} + V_{\text{be}}$

(B) $V_{\text{out}} = V_{\text{zener}} - V_{\text{be}}$

(C) $V_{\text{out}} = V_{\text{zener}} + V_{\text{be}}$

(D) $V_{\text{out}} = I_{\text{zener}} - V_{\text{be}}$

24 The switching regulators can operate in

(A) All the mentioned

(B) Step up

(C) Step down

(D) Polarity inverting

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

(A) AC transformer

(B) DC – AC transformers

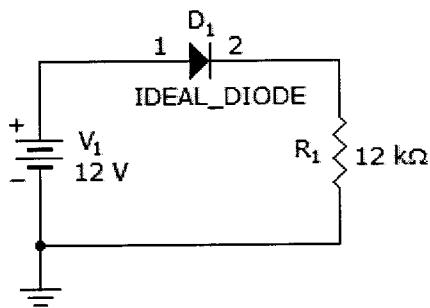
(C) AC – DC transformers

(D) DC transformer

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

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

27 What is the current through the diode ?



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

28 The semiconductor diode can be used as a rectifier because_____.

- (A) Its conductivity increases with rise of temperature.
- (B) It has low resistance to the current flow when forward biased and high resistance when reverse biased
- (C) It has low resistance to the current flow when forward biased.
- (D) It has high resistance to the current flow when reverse biased