



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"/>
Section No. (1, 2,.....) : <input type="text" value="1,2,3"/>	
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 pn junction allows current flow when
 - (A) the p-type material is more positive than the n-type material
 - (B) there is no potential on the n-type or p-type materials
 - (C) both the n-type and p-type materials have the same potential
 - (D) the n-type material is more positive than the p-type material

- 2 With full-wave rectification, current through the load resistor must be
 - (A) from the reverse biased diode
 - (B) to the external load
 - (C) in opposite directions
 - (D) in the same direction

- 3 DC power should be connected to forward bias a diode as follows :
 - (A) + cathode, + anode
 - (B) + anode, - cathode
 - (C) -anode, + cathode
 - (D) - cathode, - anode

- 4 The 7912 voltage regulator produces an output voltage that is
 - (A) 12 V
 - (B) 9 V
 - (C) 3V
 - (D) -12 V

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

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

- 13 Alkaline cells :
- (A) Have higher voltages than zinc-carbon cells
 - (B) Have shorter shelf lives than zinc-carbon cells
 - (C) Are cheaper than zinc-carbon cells
 - (D) Are generally better in radios than zinc-carbon cells
- 14 Which of the following cell is not rechargeable ?
- (A) Fuel cell
 - (B) Ni-Cd cell
 - (C) Lead storage battery
 - (D) Silver oxide cell
- 15 In full-wave rectification the output D.C. voltage is obtained across the load for
- (A) The complete cycle of A.C.
 - (B) Either positive or negative half of A.C.
 - (C) The negative half cycle of A.C.
 - (D) The positive half cycles
- 16 A current booster is a transistor in
- (A) Either series or parallel
 - (B) Shunt with the load
 - (C) Parallel with the IC regulator
 - (D) Series with the IC regulator
- 17 In which of the following places would you most likely choose a lithium battery ?
- (A) A portable audio cassette player
 - (B) A rechargeable flashlight
 - (C) A two-way portable radio
 - (D) A microcomputer memory backup

- 18 A zener diode can be used to provide _____ in a power supply.
- (A) Voltage Amplification
 - (B) Current Amplification
 - (C) Current Regulation
 - (D) Voltage Regulation
- 19 The small amount of ac signal present on the output of a filtering network for a dc power supply is known as _____.
- (A) trickle
 - (B) waffle
 - (C) pulsating dc
 - (D) ripple
- 20 Transistor series voltage regulator has _____ and _____ as compared to other regulators with the input variations.
- (A) constant regulation and ripple suppression
 - (B) None of these
 - (C) strong regulation and ripple suppression
 - (D) poor regulation and ripple suppression
- 21 Special diodes designed to conduct in the reverse direction are called _____ diodes.
- (A) LED
 - (B) switching
 - (C) zener
 - (D) varactor
- 22 A fixed voltage regulator can be a _____
- (A) Positive or negative voltage regulator
 - (B) Variable voltage regulator
 - (C) Positive voltage regulator
 - (D) Negative voltage regulator

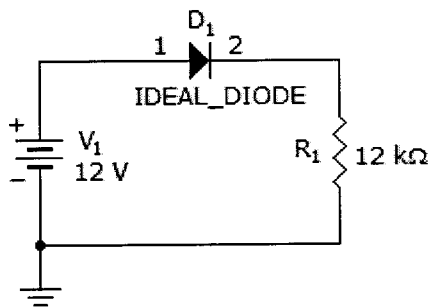
23 Filter used in switching regulator's are also as called

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

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

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

25 What is the current through the diode ?



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

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