

Printing Pages : 1

Paper Code : - BEEE-001

(A) (SVSU) : 2023-2024/R

Enrollment No.

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B.Tech (EEE)

**III YEAR, V SEMESTER EXAMINATION
ELECTRICAL MATERIALS**

[Time : 03:00 Hours]

[Max. Marks : 70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS.**QUESTION NO.-1: ATTEMPT ANY FOUR PARTS.**

(4*3=12)

- Briefly explain Ionic bond with crystal structure.
- Write a short note on crystal growth.
- Discuss briefly the Schottky defect.
- Briefly explain the various factors affecting the electrical resistance of material.
- Draw the stress-strain curve showing the difference between engineering stress and true stress.
- Define "The Thomson Effect".

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

- What do you understand by Crystallinity?
- What is meant by coordination number.
- Briefly describe the effect of mechanical stressing on resistivity?
- Briefly explain the drift and diffusion current in semiconductor.

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

- What do you understand by Atomic Radius? Calculate the Atomic Radius of Simple cubic and Body centered cubic crystal (BCC).
- Why is FET known as a unipolar device?
- Describe the basic construction of N-channel FET.
- Describe magnetostriction with suitable graph.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Describe the V-I characteristics of PN junction.
- Briefly explain the term "Diamagnetism".
- Describe permanent magnetic materials with example.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Briefly explain the N-type extrinsic semiconductor with energy band diagram.
- Briefly explain the properties of magnetic materials
- Describe the thermal classification of insulating material.

15/12/23

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Paper Code : BEEE-501

(B) (SVSU) : 2023-2024/R

Enrollment No.

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B.TECH (EEE)

III YEAR V SEM EXAMINATION

POWER SYSTEM-I

[Time : 3:00 Hours]

[Max. Marks : 70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS.

QUESTION NO.-1: ATTEMPT ANY FOUR PARTS.

(4*3=12)

- (a) State the advantages of having bundled conductors in transmission line.
- (b) What is ACSR. Give advantages of it..
- (c) Explain briefly about Kelvins Law.
- (d) Explain the difference in feeder and distributor..
- (e) What is string chart.

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

- (a) What do you understand by the term grading of cables.
- (b) What is arcing horn.
- (c) List the main components of overhead lines.
- (d) What is surge impedance loading.

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

- (a) What is neutral grounding and why it is important?
- (b) Differentiate between lightning arrester and surge arrester.
- (c) Define below terms.
 - (i) Corona
 - (ii) Interference
- (d) Illustrate the term Sag and explain the importance of it.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- (a) Draw and explain the various types of insulators used in transmission and distribution of electrical power.
- (b) Explain the effect load power factor on the transmission efficiency and voltage regulation of transmission line.
- (c) Explain the influence of capacitance on performance of loaded line.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- (a) Write notes on:
 - (i) String efficiency.
 - (ii) Power Loci Transmission Line.
 - (iii) Voltage regulation of transmission lines.
- (b) Estimate the weight of copper required to supply a load of 100 MW at UPF by a 3-phase, 380 kV system over a distance of 100 km. The neutral point is earthed. The resistance of the conductor is $0.045 \Omega/\text{cm}^2/\text{km}$. The weight of copper is 0.01 kg/cm^3 . The efficiency of transmission can be assumed to be 90 per cent.
- (c) Explain in brief about EHVAC and HVDC.

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(B) (SVSU) : 2023-2024/R

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B.Tech (EEE)

III YEAR, V SEMESTER EXAMINATION MICROPROCESSORS

[Time : 03:00 Hours]

[Max. Marks : 70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS.

QUESTION NO.-1: ATTEMPT ANY FOUR PARTS.

(4*3=12)

- What do you mean by interrupt? Explain the Hardware and software interrupts.
- What are address bus, data bus, control bus? Explain with diagram?
- What are differences between memory mapped I/O and I/O mapped I/O?
- Draw and explain the Flag register of 8086 microprocessor?
- Draw and explain the block diagram of a microprocessorbased system?

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

- Explain the following terms:instruction cycle,machine cycle,T-state?
- Explain the Evolution of Microprocessors?
- Explain the following terms:memory, inputs-outputs, data transfer schemes, interfacing devices?
- Draw and explain the pin configuration of 8085 microprocessor?

QUESTION NO.-3: ATTEMPTANY THREE PARTS.

(3*6=18)

- Explainthe instructions set of 8085 microprocessor with suitable example of each.
- Draw and explain the internal architecture of 8086 microprocessor?
- What do you mean by addressing Modes? Explain Register addressing, direct addressing; register indirect addressing, immediate addressing, and implicit addressing with example.
- Writing an assembly language program in 8085 to additionof two 8-bit data stored at different locations.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- What do you understand by DMA? Draw and explain the operation of DMA controller?
- Draw and explain the working of 8255- Programmable peripheral interface?
- Draw and explain the internal architecture of 8085 microprocessor?

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Draw and explain the working of 8259 programmable Interrupt Controller.
- Draw and explain the working of 8253/8254 Programmable timer/counter.
- Writing an assembly language program in 8086 to subtract of two16-bit data stored at different locations.

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(A) (SVSU) : 2023-2024/R

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B.Tech (EEE)

**III YEAR, V SEMESTER EXAMINATION
ELECTRIC DRIVES**

[Time : 03:00 Hours]

[Max. Marks : 70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS.**A. Attempt Any Two Questions [7*2=14]**

1. What are the functions of power modulator in an electric drive?
2. What do you understand by constant torque drive and constant power drive?
3. Give one application of dual converter for speed control of DC motor.

B. Attempt Any Two Questions [7*2=14]

1. What are the methods of reducing energy loss during starting?
2. Explain in detail about the different types of PM synchronous motor?
3. Define four quadrant operation of drive considering hoist as an example.

C. Attempt Any Two Questions [7*2=14]

1. What are the types of Electric starting? Define.
2. Draw and explain the speed torque characteristics of a variable stator voltage controlled induction motor. Why stator voltage control is not suitable for speed control of induction motor with constant load torque.
3. Draw the circuit diagram of a class-C chopper fed DC motor. Draw its V/I characteristics.

D. Attempt Any Two Questions [7*2=14]

1. Explain three phase controlled converters with neat sketch?
2. Describe the advantages of electric braking. Classify the electric braking.
3. Differentiate VSI fed induction motor drive with CSI fed induction motor drive.

E. Attempt Any Two Questions [7*2=14]

1. List different types of cycloconverters. Explain single phase step down cycloconverter with circuit diagram and waveforms.
2. Describe speed control of induction motors using three phase ac voltage controller.
3. A 220 V, 1000 rpm, 100 A separately excited dc motor has an armature resistance of 0.1 Ω . The motor is driving a constant torque load equal to the rated torque. Calculate the motor speed if the voltage drops to 200 V.
