

06/05/24

Printing Pages : 1

Paper Code : - BEEE-601

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

Enrollment No.

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B.Tech (EEE)

III YEAR, VI SEMESTER EXAMINATION POWER SYSTEM-II

[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)

- Explain the cause of faults in power system.
- Elaborate the term 'Harmonics'.
- Make a note on rated current and rated voltage.
- Define the symmetrical fault.
- Base voltage = 1,200 volts. Base kVA = 10^8 . What is base impedance?

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

- List the advantages and disadvantages of per unit system.
- List the equipment and their percentage of fault occurs in power system.
- Mention the sources of fault power.
- Define pu impedance.

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

- Classify the bus types and explain the generator bus.
- A single phase load of 100kVA connected across lines b-c of 3-phase supply of 3.3kV. Determine the symmetrical components of current.
- Explain the symmetrical components of 3-phase systems with suitable figure.
- Define the transient stability.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- At a particular bus in a power system, the load complex power aggregates to $(100+j50)$ MVA and the generator complex power to $(150-j75)$ MVA. How is this power classified? What is the bus complex power?

- The phase voltages across a certain unbalanced 3-phase load are given as;

$$E_R = 165-j133; E_Y = -118-j86; E_B = -160+j100$$

Determine the zero, positive and negative sequence components for above voltages.

- A single phase transformer is rated as 2.5 kVA, 11/0.6 kV. If the leakage reactance is 0.86Ω when referred to low-voltage side, then determine its leakage reactance in per unit.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Write the techniques to protect the equipments and line against travelling waves.
- Explain the Bewlay's Lattice Diagram.
- Write the comparisons between Gauss-Seidel and Newton-Raphson's method.

Printing Pages : 1

Paper Code : - BEEE-612

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

Enrollment No.

[illegible]

B.Tech (EEE)

III YEAR, VI SEMESTER EXAMINATION
LINE-COMMUTATED AND ACTIVE PWM RECTIFIERS

[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 Rectifiers? Explain with figure?
- What are different applications of rectifiers? Explain.
- Draw and explain the Half-wave rectifier circuit?
- Differentiate between Half-wave and full-wave rectifiers?
- Draw and explain the Half-wave rectifier circuit with RL load?

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

$$(3 * 4 = 12)$$

- Draw and explain Full-wave Rectifier circuit with RC load?
- Draw and explain Full-wave Rectifier circuit with RL load?
- Draw and explain 3-phase diode rectifier with L, C and LC filter?
- Draw and explain Half-wave Thyristor rectifier with R load?

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

- a) Draw and explain Half-wave Rectifier circuit with R, L, C, RC, RL load?
b) Draw and explain Half-wave Thyristor rectifier with RL load?
c) Draw and explain Half-wave Thyristor rectifier with RC load?
d) Draw and explain Half-wave Thyristor rectifier with LC load?

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Write a short note on phase shifting transformer?
- Explain the twelve pulse converter?
- Explain in brief the dc-dc converter?

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- Explain the working of six-pulse mid-point converter?
- Explain the operation of 1-phase inverter and 3-phase inverter?
- Write a short note on dc-dc flyback converter?

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Enrollment No.

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B.Tech (EEE)
III YEAR, VI SEMESTER EXAMINATION
MECHATRONICS

[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)

- a) What is electric drive system?
- b) Define Strain Gauge transducer with neat diagram.
- c) Explain the features and applications of servomechanism.
- d) Define the Position transducer with diagram.
- e) Describe filtering with neat diagram.
- f) What is Pressure valve? Discuss its working.

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

- a) Write about the Mechatronics approach in micro-processor-controlled VCR machine.
- b) Discuss about PLC with neat diagram.
- c) Differentiate between Microprocessor and Microcontroller.
- d) Define the velocity transducer with neat diagram.

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

- a) What is Signal Conditioning Amplification? Define it with block diagram.
- b) Discuss the Level transducer with neat diagram.
- c) What do you understand by robotics? How it is useful in industry.
- d) What are the functions of NC machine? Discuss about its operating principle in detail.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Define LVDT with neat diagram.
- b) What is Stepper Motor? Define it with neat Diagram
- c) Discuss the Force transducer with diagram.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Explain the working principle of a computer printer.
- b) What is the role of interfacing in communication? Define it with neat diagram.
- c) Differentiate between open loop and closed loop control system with examples.
