

Roll No.

3079

**B. Tech. 4th Semester (Bio-Tech)
Examination – May, 2026**

ORGANIZATIONAL BEHAVIOUR

Paper : HSMC-02-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Answer the following questions in short: $2.5 \times 6 = 15$

- (a) Explain the nature of Management.
- (b) Define organizational Behavior.
- (c) What is Communication ?
- (d) Define Leadership.
- (e) What is organizational structure ?
- (f) Define Planning.

3079-8950-(P-3)(Q-9)(26)

P. T. O.

UNIT – I

2. What do you understand by Management ? Explain in brief the main functions of Management. 15
3. What is planning ? State what advantages does planning confer to an organization ? 15

UNIT – II

4. Explain the concept of organizational Behaviour. Discuss its importance and relationship with other fields. 15
5. Define perception. Explain their determinants and applications in organizational Behaviour. 15

UNIT – III

6. Define group and Team. Explain the stages of group development and difference between team and group. 15
7. What is Leadership ? Discuss the concept, functions and qualities of an effective Leader. 15

UNIT – IV

8. Define Organizational structure. Explain the types of organizational structure and their impact on human behaviour. 15
 9. What is Organizational Change ? Discuss the factors affecting organizational change and resistance to change. 15
-

Roll No.

3349

**B. Tech. 6th Semester (EE)
Examination – May, 2026**

POWER SYSTEMS - II

Paper : PCC-EE-302-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all. Question No. 1 is *compulsory*. Attempt *four* more question from the Sections-A, B, C & D by selecting *one* question from each Section.

1. (a) Define Dynamic stability.
- (b) What do you mean by Penalty factor ?
- (c) What are the quantities that are associated with each bus in a power system ?

3349-1100-(P-4)(Q-9)(26)

P. T. O.

- (d) What are the information's that are obtained from a load flow study ?
- (e) Define incremental cost.
- (f) What do you mean by the equality constraints in economic load dispatch problem ? $6 \times 2.5 = 15$

SECTION - A

2. Mention the various types of buses in power system with specified quantities for each bus. Also derive the basic load flow equation for n- bus system. 15
3. Formation of y bus by direct inspection method for the data as given below : 15

Sr. no.	Sending node	Receiving node	R(PU)	X(PU)
1	1	2	0.10	0.40
2	1	4	0.15	0.60
3	2	3	0.05	0.20
4	3	4	0.10	0.40
5	4	5	0.10	0.40
6	5	3	0.15	0.60

3349- (P-4)(Q-9)(26) (2)

SECTION - B

4. (a) Consider the following incremental cost curves in Rs./MWh for a plant having two units.

$$dC_1/dP_{G1} = 0.20 P_{G1} + 40$$

$$dC_2/dP_{G2} = 0.25 P_{G2} + 30$$

Calculate the extra cost incurred in Rs./h, if a load of 220 MW is scheduled as $P_{G1} = P_{G2} = 110$ MW.

10

- (b) Write short note on unit commitment. 5

5. Derive the expression for economic load dispatch neglecting transmission line losses. 15

SECTION - C

6. Explain turbine speed governing system in detail with neat and clean diagram. 15

7. What are the different methods for voltage control in power system ? Explain in brief. 15

3349- (P-4)(Q-9)(26) (3)

P. T. O.

SECTION - D

8. Derive swing equation and discuss its application in study of power system stability. 15
9. What do you understand by equal area criteria and plot a δ vs t curve for the stable and unstable system ? 15

Roll No.

3350

**B. Tech. 6th Semester (EE)
Examination – May, 2026**

POWER ELECTRONICS

Paper : PCC-EE-306-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) Write the name and symbol of any four power semiconductor devices. $1.5 \times 10 = 15$
(b) Draw the Switching characteristics of MOSFET.
(c) What is the basic function of an excitation system ?
(d) Differentiate between SCR and TRIAC.
(e) What is the principle of operation of fly-back converter in CCM ?

3350- 1060(P-3)(Q-9)(26)

P. T. O.

- (f) What is the effect of connecting freewheeling diode across R-L load in controlled rectifiers ?
- (g) What is an AC chopper ?
- (h) What are the disadvantages of the harmonic present in the inverter system ?
- (i) Why power factor of semi converter is better than full converter ?
- (j) Define Latching and holding current.

SECTION - A

- 2. (a) Discuss a typical driver Circuit suitable for IGBT. 7.5
- (b) List the advantages of GTO over SCR. 7.5
- 3. (a) Give the cross-sectional view of a TRIAC and explain its turn-on process with relevant diagrams. 7.5
- (b) List the qualities of a schottky diode and explain the characteristics. 7.5

SECTION - B

- 4. Draw and explain the static and Switching characteristics of SCRs. 15
- 5. (a) Explain the operation of pulse transformer and opto-coupler. 7.5
- (b) Describe various commutation techniques in SCR. 7.5

SECTION - C

- 6. (a) Describe a 3-phase half wave diode bridge rectifier with a circuit diagram and relevant waveforms for R load. 7.5
- (b) Explain the operation of single phase two pulse midpoint converter with relevant voltage and current waveforms and also derive the expression for average output voltage. 7.5
- 7. (a) Describe the working of three phase half controlled converter with RL load and derive the expression for average output voltage. 7.5
- (b) Explain a brief about a four quadrant/dual converter. 7.5

SECTION - D

- 8. (a) Write a note on conduction schemes of inverters. 7.5
- (b) Write the brief description of parallel and series inverters. 7.5
- 9. (a) Derive the expression for the output voltage of step-up chopper. 7.5
- (b) Explain a four quadrant chopper in detail. 7.5

Roll No.

3351

**B. Tech. 6th Semester (EE)
Examination – May, 2026
ELECTRONICS DESIGN LABORATORY**

Paper : LC-EE-310-G

Time : Three Hours]

[Maximum Marks : 50

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) Distinguish briefly direct and indirect method of measurement. $4 \times 2.5 = 10$
- (b) Define signal conditioning.
- (c) Briefly discuss the function of transducer.
- (d) What are the types of interrupts in 8051.

3351-850-(P-2)(Q-9)(26)

P. T. O.

UNIT – I

2. What is signal conditioning ? Also discuss various types of signal conditioning. 10
3. Describe direct and indirect method of measurement and generalised measurement system. 10

UNIT – II

4. What is data acquisition system ? Describe the components and objective of the data acquisition system. 10
5. Discuss the characteristics of ideal operational amplifier. 10

UNIT – III

6. Write a short note on : 10
 - (a) CPLD
 - (b) FPGA
7. What do you mean by A/D converter ? Explain the performance and characteristics of A/D converter. 10

UNIT – IV

8. Explain the interfacing of LCD with 8051 microcontroller. 10
9. Write a short note on PCB design and layout. 10

Roll No.

3352

**B. Tech. 6th Semester (EE) (Elective-IV)
Examination – May, 2026**

POWER SYSTEM PROTECTION

Paper : PEC-EE-06-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (i) Explain the working principle of relay ? 15
(ii) What do you mean by sequence network ?
(iii) Write the standards of protection scheme.
(iv) What are the phasor measurement unit ?

SECTION – A

2. Explain the classification of circuit breaker in details. 15

3352-600-(P-2)(Q-9)(26)

P. T. O.

3. Write short notes on : 15

- (a) Instrument transformers
- (b) Protection against the failure of excitation.

SECTION - B

- 4. Explain the differential protection in transformer with neat and clean diagram. 15
- 5. Explain the working of Buchholz relay. 15

SECTION - C

- 6. Explain the differential protection for the equipment. 15
- 7. Explain the distance protection for the equipment. 15

SECTION - D

- 8. Explain the under frequency protection scheme. 15
- 9. What are the application of WAMS for improving protection system ? 15

Roll No.

3353

**B. Tech. 6th Semester (EE) (Elective-IV)
Examination – May, 2026**

ADVANCE ELECTRIC DRIVES

Paper : PEC-EE-18-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Section. Question No 1 is compulsory. All questions carry equal marks.

1. (a) Explain the PWM control of inverters used in AC drives. $10 \times 1.5 = 15$
(b) Discuss the operation and advantages of three-level inverters.
(c) Explain the operation of diode rectifiers with boost choppers in AC drives.
(d) Discuss the control strategies for Current Source Inverters (CSI) in AC drives.

3353-600-(P-4)(Q-9)(26)

P. T. O.

- (e) Discuss the different transformations and reference frame theories used in induction motor drives.
- (f) Explain the modelling of induction machines for control purposes.
- (g) Explain the operation of an H-bridge as a 4-quadrant drive.
- (h) Discuss the principles of voltage-fed inverter control including V/f control.
- (i) Discuss the use of PWM converters as line-side rectifiers.
- (j) List out various available DSPs.

SECTION – A

- 2. Explain the Pulse Width Modulation (PWM) control techniques used in inverters for AC drives. Discuss selected harmonic elimination and space vector modulation methods for improving inverter performance and reducing harmonic distortion. 15
- 3. Discuss the operation and advantages of three-level inverters in AC drives. Explain how they offer better voltage utilization and reduced switching losses compared to traditional two-level inverters. 15

3353- (P-4)(Q-9)(26) (2)

SECTION – B

- 4. Describe the different transformations and reference frame theories used in modelling induction motor drives. Explain how these theories are applied in control algorithms for achieving efficient motor operation. 15
- 5. Explain the principles of voltage-fed inverter control, including V/f control and vector control. Discuss the advantages and limitations of each control method and provide examples of their applications in induction motor drives. 15

SECTION – C

- 6. Discuss the modelling of synchronous machines for synchronous motor drives. Explain the principles of open-loop V/f control and vector control for synchronous motors. Provide examples of their applications in various industrial settings. 15
- 7. Describe the various types of permanent magnet motors, including BLDC and PMSM. Compare their characteristics and applications. 15

3353- (P-4)(Q-9)(26) (3)

P. T. O.

SECTION - D

8. Discuss the evolution of switched reluctance motors and various topologies for SRM drives. Explain the closed-loop speed and torque control techniques used in SRM drives. 15
9. Explain the use of Digital Signal Processors (DSPs) in motion control systems. Describe the implementation of basic motion control blocks using DSPs. 15

Roll No.

3357

B. Tech. 6th Semester (Elective-V)

Examination – May - 2026

Conventional and Renewable Energy Resources

Paper : OEC-EE-08-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all. Question no. 1 is *compulsory*. Attempt *one* question from each Section. All questions carry equal marks.

1. Answer the following briefly :

- (i) What are non-conventional energy sources ? Give two examples.
- (ii) What do you mean by recent trends in power generation ?
- (iii) Define maximum demand.

3357-1550(P-3)(Q-9)(26)

P. T. O.

- (iv) What is diversity factor ?
- (v) Define connected load.
- (vi) What is tariff in power systems ?
- (vii) Write two main components of a thermal power station.
- (viii) What is the working principle of a wind power plant ?
- (ix) What is energy management ?
- (x) What are energy efficient motors ?

SECTION - A

2. Describe Recent Trends in Power Generation.
3. Discuss the generation of electric power from conventional and non-conventional energy sources in Haryana and India.

SECTION - B

4. Explain load duration curve and discuss its importance in power generation planning.
5. Explain the following terms used in power plant economics :

- (a) Plant factor

3357- (P-3)/(Q-9)/(26) (2)

- (b) Capacity factor
- (c) Depreciation
- (d) Tariff

SECTION - C

6. Explain the working of a Hydro Electric Power Plant with a neat schematic diagram.
7. Explain the Magneto Hydro Dynamic (MHD) power generation system or Fuel Cell with principle and advantages.

SECTION - D

8. Explain energy efficient motors and discuss methods to improve motor efficiency.
9. What is Co-generation ? Explain its types and advantages in energy conservation.

3357- (P-3)/(Q-9)/(26) (3)