B. Tech. (EE) 7th Semester (G-Scheme)

Open Elective-IV Examination, December 2025

ELECTRONIC PRINCIPLES

Paper : OEC-ECE-451-G

Time allowed : 3 Hours] *[Maximum marks : 75*

Note: *Attempt **five** questions in total.. **Question No. 1 is compulsory.** Attempt one question from each unit.*

1. (a) Write briefly about load line concept for diode. 6×2.5=15

   (b) Discuss effect of ripples in rectifier.

   (c) Enumerate applications of voltage regulator.

   (d) Give out advantages of LCD over LED.

   (e) Convert Decimal 107.25 into binary.

   (f) Convert Hexa 2AC4 into octal.

Unit-I

2. (a) Explain formation of PN junction and draw its VI characteristics. 9

   (b) Discuss switching Characteristics of a PN Diode. 6

3. (a) Explain working of a full wave rectifier. 9

(b) Explain working of clamping circuit. 6

Unit-II

4. Write short notes on t'. . followings :

(a) Working of LED. 8

(b) Working principle of BJT 7

5. (a) Explain working of MOSFET. 8

(b) Explain working of DIAC. 7

Unit-III

6. What do you understand by LCD? Draw the diagram and explain working of LCD. Also enumerate its applications. 15

7. Draw the electrical and circuit diagram and explain working of 16 segment display. Also write Truth table. 15

Unit-IV

8. (a) Solve the followings : 2×5=10

(i) $A + BC + CA - AB\,(A - B - C)$

(ii) $(A + C + B) + (B + C + 1)$

(b) Draw symbol and Truth table of EX-OR and NAND gate. 5

9. (a) Explain working of combinational circuit. 7

(b) Explain working of SR flip flop and write is truth table. 8

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B.Tech. (CSE) Open Elective-I, 7th Semester

G-Scheme Examination, December-2025

FUNDAMENTALS OF MANAGEMENT

Paper-HSMC-08-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : *Attempt **five** questions in all, selecting **one** question from each section. **Question No. 1 is compulsory**.*

Section-I

1. Explain the following concepts : 6×2½=15

   (a) Promotion and Recruitment

   (b) Material Management

   (c) Advertising

   (d) Importance of Capital in Financial Management

   (e) Material Management

   (f) Financial Management

Section-II

2. Describe Management Functions and levels of Management. Explain inter-relationship of Managerial functions. 15

3. Write short note on : $2 \times 7\frac{1}{2} = 15$

(a) Types of Recruitment.

(b) Objectives and types of Training.

Section-III

4. Discuss about Production Planning in detail. What are the stages in production planning and control ? 15

5. Define Material Management. Explain its features and significance in detail in Production Planning. 15

Section-IV

6. Explain the Process and significance of Marketing Research. 15

7. What are the objectives and functions of Marketing Management ? 15

Section-V

8. Write the importance and functions of Financial Management. 15

9. What are the various sources of finance ? 15

B.Tech. 7th Semester G-Scheme (EE)
Program Elective-IV Examination, December-2025
POWER MANAGEMENT
Paper–PEC-EE-401G

Time allowed : 3 hours] *[Maximum marks : 75*

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

1. (a) State the difference between feasibility and pre-feasibility studies.
   (b) What are conventional and non-conventional energy sources ?
   (c) Define availability factor of a generating unit.
   (d) What is meant by life cycle cost of a plant ?
   (e) What is load dispatch center (LDC) ?
   (f) Define risk and hazard. 6×2½=15

Section–A

2. (a) Explain the role of power resource planning in India's energy policy. 7½
   (b) Describe the procedure of conducting feasibility studies for power projects. 7½

3. (a) Discuss how environmental factors affect power site selection. 7½

(b) Illustrate power development planning stages with a flow chart. 7½

Section–B

4. (a) Explain the principles of maintenance planning and scheduling. 7½

(b) Describe cost control techniques used in project management. 7½

5. Draw and explain the general layout of thermal power plant equipment. 15

Section–C

6. (a) Describe management of fuel and water resources in power plants. 7½

(b) Discuss the principles of electricity pricing and tariffs. 7½

7. (a) Write a short note on grid management and site visits. 7½

(b) Discuss electricity tariff structures and their economic implications. 7½

Section–D

8. Describe the structure of Indian electricity industry and explain safety regulations governing it. 15

9. (a) What are the major causes of risk in power systems? Explain in brief. 7½

(b) Illustrate various safety measures used in thermal and hydropower plants. 7½

B. Tech. 7th Semester G - Scheme

(Program Elective - IV)

Examination, December-2025

UTILIZATION OF ELECTRIC POWER

Paper : PEC-EE-405-G

Time allowed : 3 Hours] *[Maximum marks : 75*

Note: *There are nine questions. Attempt any **five** questions in total. **Question No. 1 is compulsory.** One question must be attempt from each section.*

1. (i) What do mean by intermittent loads. 15

   (ii) Describe dielectric heating.

   (iii) Define the photometry briefly.

   (iv) Describe special features of traction motor.

Section-A

2. Explain the particular applications of electric drives. 15

3. Write short note on: 15

   (a) Choice of motor

   (b) Starting and running characteristics

Section-B

4. Explain the resistance, induction and dielectric heating in details. 15

5. Describe the electric welding equipment in details. 15

Section-C

6. Explain the MV and SV lamps. 15

7. Write short note on: 15

   (a) Laws of illumination

   (b) Polar curves

Section-D

8. Write short note on: 15

   (a) Plugging braking

   (b) Regenerative braking

9. Describe the review of existing electric traction systems in India. 15

B. Tech. 7th Semester G-Scheme (EE) Program

Elective-V Examination, December-2025

Advanced Power Transmission

Paper : PCE-EE-415-G

Time allowed : 3 Hours] *[Maximum marks : 75*

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

1. (a) What are advantages of HVDC over EHVAC? 5×3=15

   (b) Outline the benefits from FACTS controllers.

   (c) What are the features of EHV transmission lines?

   (d) What are boundled conductors? What are their advantages?

   (e) Write briefly about the stopping of dc link.

Section-A

2. Explain the surface voltage gradient on conductors. 15

3. (a) Discuss why EHV AC lines are necessary to transmit large block of power over long distances? 15

   (b) Give the properties of bundled conductors.

Section-B

4. (a) Explain the advantages of DC transmission. 2×7.5=15

   (b) What are the different components of HVDC system? 7.5

5. Write short note on : 2×7.5=15

   (a) Power Control DC link

   (b) Control of converters

Section-C

6. Explain the mechanism of active and reactive power flow control. 15

7. Write short note on : 2×7.5=15

   (a) Static synchronous compensator (STATCOM).

   (b) Unified power flow controller (UPFC).

Section-D

8. Write short note on : 2×7.5=15

   (a) Control of power quality

   (b) Factors affecting power quality

9. (a) Explain about long duration and short duration voltage variations. 2×7.5=15

   (b) Explain different sources of voltage sag and interruption.

B.Tech. 7th Semester (EE) Open Elective–III G-Scheme

Examination, December–2025

RENEWABLE ENERGY AND DISTRIBUTED GENERATION

Paper–OECEE403-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : ***Question No. 1 is compulsory.*** *Attempt total* ***five*** *questions selecting* ***one*** *question from each unit. All questions carry equal marks.*

1. Write short note on : 2.5×6

   (a) Internal Combustion Engines.

   (b) Wave Engery.

   (c) Fuel Cells

   (d) Transmission System Operation

   (e) Geothermal Energy.

   (f) Power Quality Disturbances.

Unit–I

2. Discuss the future trends in energy generation. Will distributed systems eventually replace central station generation or will they coexist ? 15

3. Describe the various types of emissions from IC engines. Discuss the strategies for reducing these emissions and the role of catalytic converters in emission control. 15

Unit–II

4. What is Biomass ? Explain the different types of biomass energy sources. Discuss the advantages and disadvantages of using biomass as an energy source. 15

5. Discuss the different types of solar thermal systems. Expain the advantages and applications of solar thermal systems in various industries. 15

Unit–III

6. Explain the role of power electronic interfaces in grid integration of renewable energy sources. Discuss the different types of power electronic converters used for grid connection including their advantages and limitations. 15

7. Discuss the impact of distributed generation (DG) on the reliability and stability of the power grid. 15

Unit–IV

8. Explain the importance of power system stability in transmission system operation. Discuss the different types of stability, including rotor angle stability, voltage stability, and frequency stability. 15

9. Evaluate the economic benefits and challenges of integrating distributed generation (DG) into the power grid. 15