

TED (15) – 3043

Reg. No.

(REVISION — 2015)

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

ELECTRICAL TECHNOLOGY

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define impedance.
2. Write the e m f equation of a DC generator.
3. Write the different classifications of D C generator.
4. What are the different types of stepper motor.
5. State superposition Theorem.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Define the terms Cycle, Time period, Frequency, Amplitude.
2. Describe effect of AC through a RL circuit.
3. State and explain in Kirchhoff's Law.
4. Explain the working of a transformer on no load.
5. Explain the necessity of a starter in a DC motor.
6. Derive the emf equation of an alternator.
7. Draw and explain the DC servo motor.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the method of Plate earthing with a neat sketch. 8
- (b) An inductor coil of 2 m H having a resistance of 2Ω , a resistor of 10Ω and a capacitance of $47\mu\text{F}$ are connected in series and fed by a 200 V, 50Hz supply. Find Impedance, pf, active power and reactive power. 7

OR

		Marks
IV	(a) Derive the equation for alternating voltage and current.	7
	(b) Explain the working of Megger with neat sketch.	8
UNIT — II		
V	(a) State and prove Thevenin's Theorem.	7
	(b) Derive the e m f equation of a transformer and state the voltage transformation ratio.	8
OR		
VI	(a) Illustrate the working theory of a transformer.	7
	(b) State and prove maximum power transfer theorem.	8
UNIT — III		
VII	(a) Explain the working principle of DC motor.	8
	(b) Explain the working of a 3 point starter with relevant sketch.	7
OR		
VIII	(a) Derive e m f equation of a DC generator.	7
	(b) Draw and explain the armature reaction and its effects.	8
UNIT — IV		
IX	(a) What is the relation between the speed and frequency of an alternator.	7
	(b) With the help of relevant figures explain the open circuit characteristics of an alternator.	8
OR		
X	(a) What is the principle of operation of a universal motor ?	7
	(b) Explain how the rotating field is produced in an induction motor.	8

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

ELECTRONIC DEVICES AND CIRCUITS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define Operating point.
2. Write the relationship between resonant frequency and bandwidth.
3. Compare BJT and FET.
4. Define Barkhausen criteria for oscillation.
5. Define piezoelectric effect.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Explain the working of Emitter Follower.
2. Describe frequency response and bandwidth of an amplifier.
3. Why heat sinks are necessary for power transistor.
4. List the comparison between voltage and power amplifier.
5. Describe the advantages of negative feedback.
6. Prove that output of RC integrator is proportional to the integral of the input.
7. Draw the circuit diagram and waveforms of Astable Multivibrator.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the working of single stage transistor amplifier in CE configuration. 8
 (b) Describe dc load line with graph. 7

OR

- IV (a) Explain the working of transformer coupled multistage amplifier. 8
 (b) Describe fixed transistor biasing in CE configuration. 7

UNIT — II

- V (a) Explain the operation of single tuned amplifier with frequency response. 8
 (b) Describe series resonance circuit with waveforms. 7

OR

- VI (a) Explain the operation of class B push pull amplifier. 7
 (b) Describe classification of power amplifier with waveforms. 8

UNIT — III

- VII (a) Derive the expression for the gain of negative feedback amplifier. 8
 (b) Explain the working of relaxation oscillator using UJT. 7

OR

- VIII (a) Describe the construction of N channel depletion MOSFET. 7
 (b) Describe the types of negative feedback in amplifiers. 8

UNIT — IV

- IX (a) Explain the working of RC phase shift oscillator. 8
 (b) List the advantages and application of crystal oscillator. 7

OR

- X (a) Explain the working of Hartley oscillator with diagram. 8
 (b) Explain the working of Schmitt trigger with circuit diagram. 7

TED (15) – 3041

Reg. No.....

(REVISION — 2015)

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

COMMUNICATION ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define smart antenna.
2. State sampling theorem.
3. Define signal to noise ratio.
4. State the need of limiter in FM receivers.
5. Draw the frequency spectrum of DSBSC wave.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Explain different layers of ionosphere.
2. Explain the working of parabolic antenna.
3. State any four needs for modulation.
4. Illustrate pulse amplitude modulation.
5. Draw the block diagram of Armstrong FM transmitter.
6. Compare AM and FM receivers.
7. Explain simple AGC with circuit diagram.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain different types of wave propagation. 9
 (b) Describe MANET and list its applications. 6

OR

- IV (a) Define the terms :
 (i) Critical frequency (ii) Maximum Usable Frequency (iii) Skip distance 9
 (b) Explain folded dipole antenna. 6

UNIT — II

- V (a) Derive the expression for amplitude modulated wave. 8
 (b) Explain different digital carrier modulation schemes with necessary wave forms. 7

OR

- VI (a) With neat diagram explain the working of balanced modulator. 8
 (b) Explain pulse code modulation. 7

UNIT — III

- VII (a) Draw and explain the block diagram of AM transmitter. 8
 (b) Explain pre-emphasis and de-emphasis. 7

OR

- VIII (a) Explain different types of noise affects in communication system. 7
 (b) Explain the working of direct FM transmitter with block diagram. 8

UNIT — IV

- IX (a) Draw the block diagram of super heterodyne receiver and explain the function of each block. 9
 (b) Define :
 (i) Fidelity (ii) Noise figure 6

OR

- X (a) Draw and explain the block diagram of FM receiver. 9
 (b) Explain the working of envelop detector with diagram. 6

TED (15) – 3001
(REVISION – 2015)

Reg. No.....
Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

ENVIRONMENTAL SCIENCE AND DISASTER MANAGEMENT

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List the various Mineral resources.
2. State the meaning of what is meant by Biomes.
3. Define environmental pollution.
4. Identify the two factors contributing air pollution.
5. Define Hazard.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Identify the social and ecological problems due to Dams.
2. Distinguish between renewable and nonrenewable sources of energy.
3. Explain the types, structure and characteristic features of forest ecosystem.
4. Identify the factors contributing marine pollution.
5. Identify the classifications of hazards based on various aspects.
6. Explain the relationship between disaster and development.
7. State the importance of renewable energy.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the problems due to over consumption of water. 8
 (b) Explain the importance of energy conservation. 7

OR

- IV (a) State the reasons for soil erosion, land slide and desertification. 8
 (b) List the different types of resources from land. 7

UNIT — II

- V (a) Explain the types, structure and characteristic features of Aquatic ecosystem. 9
 (b) Explain the ecological pyramid. 6

OR

- VI (a) Explain the types, structure and characteristic features of desert ecosystem. 6
 (b) Explain Biomagnifications and its impacts. 9

UNIT — III

- VII (a) State various methods to control air pollution. 7
 (b) Identify the sources contributing to water pollution. 8

OR

- VIII (a) Explain the effects of noise pollution. 8
 (b) State various measures to control noise pollution. 7

UNIT — IV

- IX (a) Explain various preventive measures for disaster risk reduction. 9
 (b) Explain the causes for different types of disasters. 6

OR

- X (a) Identify and explain various operations to be carried out during post-disaster phase. 9
 (b) Illustrate how health and disaster management are interrelated. 6
-