M- 302 APPLIED ELECTRICAL AND ELECTRONICS

MODEL BLUE PRINT for the Question Paper

S.No	Chapter/ Unit Title	No. of periods	Weightage Allocated	Marks wise Distribution of Weightage				Question wise Distribution of Weightage			
				R	U	Ap	An	R	U	Ap	An
1	Fundamentals of Electrical Circuits	12	16	6	10	-		2	1	-	
2	DC and AC Machines	14	26	6	20	-		2	2	-	
3	Special purpose electrical machines and Measuring instruments	14	26	6	20	-		2	2	-	
4	Electrical Safety	10	16	6	10	-		2	1	-	
5	Basic Electronics	10	26	6	20	-		2	2	-	
	Total	**60**	**110**	**30**	**80**	**-**		**10**	**08**	**-**	

R-Remembering; U-Understanding; Ap-Applying; An- Analysing

MODEL PAPER – FORMATIVE ASSESSMENT - 1

BOARD DIPLOMA EXAMINATION, (C-23)

M- 302 APPLIED ELECTRICAL AND ELECTRONICS

Duration: 90 minutes Maximum Marks: 40

Part-A

Note: Answer all five questions. **4X3 = 16**

First question carries four marks and remaining each question carries three marks.

1. (a) Electrical unit for resistance is _____. (CO1)

(b) Ohm's law does not obeys for _____. (CO1)

(c) The Power factor of a pure resistor is unity: (true/ false) (CO1)

(d) The power absorbed by a pure inductive circuit is_____. (CO1)

2. State work, power and energy. (CO1)

3. State the methods of speed control of DC motors. (CO2)

4. Write any three applications of AC machines. (CO2)

5. List the types of servo motors. (CO3)

Part-B

Note: Answer all three questions. 3X8 = 24

Each question has its own choice and carries eight marks.

6. Explain Kirchhoff's laws with legible sketch. (CO1)

(OR)

State and explain dynamically induced EMF and statically induced EMF. (CO1)

7. Explain the construction and working of welding transformer. (CO2)

(OR)

Explain the construction and working of Three Phase Induction Motor. (CO2)

8. Describe the working principle of permanent magnet stepper motor (CO3)

(OR)

Describe the working principle of Brushless servo motor. (CO3)

UNIT TEST - 2

M- 302 APPLIED ELECTRICAL AND ELECTRONICS

Duration: 90 minutes Maximum Marks: 40

Part-A

Note: Answer all five questions. 4X3 = 16

First question carries four marks and remaining each question carries three marks.

1. (a) Fuse wire is made up of an alloy of _____. (CO4)

(b) The purpose of earthing electrical appliances is _____ (CO4)

(c) Earth wire is made of _____ material (CO4)

(d) Circuit breaker is used to _____. (CO4)

2. Define transducer and list any three applications of transducer. (CO3)

3. State the need of earthing of electrical equipment and machinery. (CO4)

4. Distinguish between Intrinsic Semiconductor and Extrinsic Semiconductor in any three aspects. (CO5)

5. Write the three possible transistor configurations. (CO5)

Part-B

Note: Answer all three questions. **3X8 = 24**

Each question has its own choice and carries eight marks.

6. What is a sensor and explain how a sensor is different from a transducer (CO3)

(OR)

Explain the first aid methods to be followed after electrocuted. (CO3)

7. Explain the pipe earthing with a legible sketch. (CO4)

(OR)

Explain the reasons and seriousness of electric shock. (CO4)

8. Explain the working of PN junction diode with forward bias and reverse bias. (CO5)

(OR)

Describe the working of zener diode. (CO5)

MODEL PAPER

UNIT TEST-II

M- 302 APPLIED ELECTRICAL AND ELECTRONICS

Time : 3 hours] [Total Marks : 80

PART—A 3x10=30M

Instructions: (1) Answer all questions.

(2) Each question carries three marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. State work, power and energy. (CO1)

2. State Fleming's right hand rule. (CO1)

3. Write the types of DC generators. (CO2)

4. Write any three applications of DC motor. (CO2)

5. State the types of Servomotors. (CO3)

6. Define sensors. (CO3)

7. What are the effects on human body due to electrical shock? (CO4)

8. State the need of earthing of electrical equipment. (CO4)

9. Define conductor, semi-conductor and insulator. (CO5)

10. State the use of transistors. (CO5)

PART—B

Instructions: (1) Answer *any* **five** questions. **5x10=50M**

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. State and explain faraday's law of electromagnetic induction. (CO1)

12. Describe the working principle of transformer with legible sketch. (CO2)

13. Describe the working principle of single phase capacitor type induction motor. (CO2)

14. a. Define transducer and explain in classification of transducer. (CO3)

b. State the need of transducer in measuring instruments. (CO3)

15. Explain the different parts of PLC by drawing the Block diagram and state the purpose of each part. (CO3)

16. Explain the first aid methods to be followed after electrocuted. (CO4)

17. Explain the working of PN junction diode with forward and reverse bias with legible sketch. (CO5)

18. Describe the working of zener diode. (CO5)