MODEL PAPER – FORMATIVE ASSESSMENT-1

C-23-EE-403

BOARD DIPLOMA EXAMINATION, (C-23)

DEEE – IV SEMESTER EXAMINATION

EE-403, POWER SYSTESMS –I

Time: 90 Minutes Total Marks: 40

PART – A **(1 x 4) + (4 x 3) = 16**

Answer all five questions. First question carries 4 marks and remaining questions carries 3 marks

1. a) Wind power plant is a _____ source of energy. (CO1)
   b) Biogas is an example of renewable energy source. State true or false. (CO1)
   c) The amount of electrical energy that can be generated by hydroelectric power plant depends on _____.
      i) Head of water ii) Quantity of water (CO2)
   d) Uranium and plutonium are nuclear fuels. State true or false. (CO2)
2. List the merits of non-conventional energy sources. (CO1)
3. State the advantages of thermal power plants. (CO2)
4. Write the water power equation. (CO2)
5. State the use of control rods in nuclear power plant. (CO2)

PART-B **3 X 8 = 24**

Answer all three questions. Each question carries 8 marks

6. a) State the need for energy conservation and State its methods. (CO1)

   (or)

   b) Explain the working of roof top solar power generation with a block diagram. (CO1)
7. a) Explain the working of each component of thermal station with line diagram. (CO2)

   (or)

   b) Explain the working of high head hydro power station with line diagram. (CO2)
8. a) Explain fission and fusion reactions of nuclear energy. (CO2)

   (or)

   b) Explain the working of gas power plant with schematic diagram. (CO2)

MODEL PAPER – FORMATIVE ASSESSMENT-2

C-23-EE-403

BOARD DIPLOMA EXAMINATION, (C-23)

DEEE – IV SEMESTER EXAMINATION

EE-403, POWER SYSTESMS –I

Time: 90 Minutes Total Marks: 40

PART – A **(1 x 4) + (4 x 3) = 16**

Answer all five questions. First question carries 4 marks and remaining questions carries 3 marks

1. a) Load factor is defined as the ratio of _____. (CO3)

   b) The rate at which the electrical energy is supplied to the Consumer is called TARIFF. State true or false. (CO3)

   c) Isolator is operated on _____ load. (CO4)

   d) Buchholz Relay is used for the protection of transformers. State true or false.(CO5)
2. Write any three merits of integrated operation of power stations. (CO3)
3. List the types of faults in power systems. (CO4)
4. List the possible faults in transformer. (CO5)
5. State the basic requirements of relays. (CO5)

PART-B **3 X 8 = 24**

Answer all three questions. Each question carries 8 marks

6. a) State the effect of power factor on electricity charges and mention the methods to improve the power factor. (CO3)

   (or)

   b) Explain the effects of load factor and diversity factor on the cost of generation of electrical energy.

   (CO3)
7. a) Explain the working principle of Minimum Oil Circuit Breaker (MOCB) with a neat sketch.

   (CO4)

   (or)

   b) Explain the working of Vacuum Circuit Breaker with a neat sketch. (CO4)

8. a) Explain the differential protection for alternators. (CO5)

   (or)

   b) State the applications of distance relay and differential relay. (CO5)

C23-EE-403

SUMMATIVE ASSESSMENT
BOARD DIPLOMA EXAMINATION, (C-23)
MODEL QUESTION PAPER
DEEE - FOURTH SEMESTER EXAMINATION
POWER SYSTEMS – I

Time: 3 hours **Total Marks : 80**

PART-A **10 X 3 =30**

Instructions:

(i) Answer all questions.
(ii) Each question carries three marks.
(iii) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State the need of non-conventional energy sources.
2. List the different methods of energy conservation.
3. List the requirements for site selection of hydro power plant.
4. State the methods to control the pollution in thermal power plant.
5. Write any three merits of integrated operation of power stations.
6. Define *(a)* load factor and *(b)* maximum demand.
7. Define and classify the Switch gear.
8. State any three properties of SF_6 gas.
9. State any six features of a relay.
10. State the probable faults in alternator stator and rotor.

PART-B **5 X10 = 50**

Instructions:

(i) Answer any five questions.
(ii) Each question carries eight marks
(iii) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the working of thermal power station with a line diagram and the write function of each component.
12. Briefly explain the functions of fore bay and spill gates.
13. Explain the working of a moderate type nuclear power station with a block diagram.
14. Explain the working of roof top solar power generation with a block diagram.
15. Explain the effects of load factor and diversity factor on the cost of electrical energy generation.
16. State the effects of low power factor on electricity charges and mention the methods to improve it.
17. Explain the working of a minimum oil circuit breaker.
18. Explain the differential protection for alternator stator.