Code No. 2798 / CBCS

FACULTY OF ENGINEERING

B.E. (EEE) VIII – Semester (CBCS) (Main) Examination, September 2020

Subject: Utilization of Electrical Energy

Time: 2 Hours **Max.Marks: 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1 What are the causes for the failure of heating element?
2 List out the different welding techniques.
3 Define plane angle and solid angle in case of illumination.
4 Define depreciation factor.
5 Explain about limit switches.
6 Differentiate between push button and float switches.
7 Write about the choice of electric traction system for India.
8 Write short notes on diesel electric traction.
9 Write short notes on DC series motor for traction.
10 Draw and explain the characteristics of DC series motor for traction.

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11 a) What are the requirements of a good heating element?
b) A resistance oven employing nichrome wire is to be operated from 220 V single phase supply and is to be rated at 16 kW. If the temperature of the element is to be limited to 1170^{o}C and average temperature the charge is 500^{o}C. find the diameter and length of the element wire. Radiating efficiency = 0.57, Emissivity = 0.9, specific resistance of nichrome = 109 x 10^{-8} ohm-m.

12 a) Explain direct reversing of a 3-phase M with the help of neat power circuit diagram.
b) Explain with neat schematic diagram of jogging operation of 3-phase I.M.

13 a) Explain laws of illumination with relevant equations and sketch.
b) With a neat sketch, explain the working of mercury vapour lamp.

14 a) What is meant by specific energy consumption and mention factors affecting specific energy consumption?
b) An electric train is to have a breaking retardation of 3.2 Km/h/s. If the ratio of maximum speed to average speed is 1.3, the time for stops is 26 seconds and acceleration is 0.8 Km/h/s, find the schedule speed for a run of 1.5 km. Assume simplified trapezoidal speed time curve.

15 a) Sketch the typical Speed-Time curve for:
i) Main line service
ii) Urban service and
iii) Sub-urban service of electric traction.
b) Explain the constructional details and maintenance of Lead Acid Batteries.

16 a) With a neat sketch explain the Ajax-Wyatt furnace.
b) Write short notes about lighting schemes.

17 a) Explain the starting of synchronous motor with the help of a neat schematic diagram.
b) Write short notes on charging of batteries.

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Code No. 2807/CBCS

FACULTY OF ENGINEERING

B.E. VIII – Semester (CBCS) (Main) Examination, September 2020

Subject : Advanced Programmable Logic Controller

Time : 2 hours **Max. Marks : 70**

PART – A

Note: Answer any five questions. **(5x2 = 10 Marks)**

1. Explain the advantages of PLC over hardwired relay logic.
2. List some output devices connected to output module of PLC.
3. Explain the holding register in Programmable Logical Controller (PLC).
4. Explain the difference between NO and NC contact of PLC ladder diagram Input Instruction.
5. List basic PLC number comparison functions.
6. Explain the PLC Trigonometric function with example.
7. Explain the difference between SKIP and JUMP function.
8. Explain the BIT-PICK CONTACT control with ladder logic.
9. Write different levels of industrial control.
10. What is computer integrated manufacturing (CIM)?

PART – B

Note: Answer any four questions. **(4x15 = 60 Marks)**

11. a) Explain the overall PLC system with neat block diagram.
    b) List out different input analog devices which can be connected to PLC.

12. Explain the Drill Press Operation Process with Ladder Diagram construction and sequence Listing.

13. Describe major PLC arithmetic functions with ladder diagram logic.

14. a) Explain the PLC Master Control Relay (MCR) function with ladder logic example.
    b) Explain the PLC MOVE Function with ladder logic example.

15. a) Explain the PLC Input analog signal processing operation with an example.
    b) Explain the concept of PLC with Internet.

16. a) An Indicating light is to go ON when a count reaches 30. The light then goes OFF when a count of 50 is reached. Write the ladder program using counter.
    b) Explain the need of repetitive clock used for arithmetic instruction in a PLC programming.

17. a) Write a ladder program to count number of parts going past a certain process point in a minute (PPM) using counter.
    b) Explain the PID Control of a Continuous process.

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Code No. 724/2285/NC

FACULTY OF ENGINEERING

B.E. 4/4 II - Semester (Backlog) Examination, September 2020
(Except – M / P/ AE)
Subject: Disaster Mitigation and Management
(Elective – II, III, & V)

Time: 2 hours **Max. Marks: 75**

PART – A

Note: Answer any seven questions. **(7x3 = 21 Marks)**

1 Differentiate between Hazard and Disaster.
2 List out any three major disasters occurred in India.
3 Write short notes on Avalanches.
4 Discuss the causes of floods.
5 What are the Losses caused by Industrial hazards?
6 Write about the different reasons for the occurrence of traffic accidents.
7 Define Remote sensing.
8 How does GIS help in preventing traffic accidents?
9 Explain the importance of fore casting disasters.
10 What is the role of media in Disaster mitigation and management?

PART – B

Note: Answer any three questions. **(3x18 = 54 Marks)**

11 a) List the goals and objectives of IDNDR.
b) Differentiate between Natural, human-induced and human made disasters with examples.

12 a) What are the causes and effects of Tsunami.
b) What are the safest measures that can be taken to reduce the damage due to Earthquakes?

13 a) Discuss the case study of Bhopal Gas Tragedy.
b) Write a short note on causes and mitigative measures of fire accidents.

14 a) Discuss how GIS can help is Disaster mitigation and Management.
b) What is the role of IMD is mitigation and management of cyclones.

15 Discuss the Disaster mitigation and management cycle with a neat sketch.

16 (a) Write short notes on Landslides.
(b) Write short notes on desertification.

17 (a) What is NVMA and explain its responsibilities.
(b) Explain the role of community in disaster reduction.

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