Hall Ticket Number :										

Code: 5G68A

R-15

IV B.Tech. II Semester Regular & Supplementary Examinations September 2020

Disaster Management

(Common to EEE & ME)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) Degree of Vulnerability depends on the type of Hazard and Coping Capacity. Explain the statement with neat and suitable flow chart. 7M
   b) Differentiate the terms 'Vulnerability' and 'Risk'. Give two suitable examples. 7M

OR

2. a) Discuss about the statement 'Disasters occurs when Hazard meets the Vulnerability' with the help of any flow chart. 10M
   b) Define Impact and give classification. 4M

UNIT–II

3. a) Classify landslides and define them. 5M
   b) Explain causes of cyclone and their varieties. 5M
   c) Define ecological fragility and quote examples. 4M

OR

4. a) Define Soil erosion and write the ways to control soil erosion 4M
   b) Explain the causes of Volcanoes and discuss about their locations in India and worldwide. 5M
   c) Discuss about the urban flooding, its various causes and remedial measures to avoid urban flooding. 5M

UNIT–III

5. a) Discuss the ecological, social, economical impacts due to cyclones and drought taking suitable examples. 10M
   b) Define and write the reasons of urban disaster. 4M

OR

6. a) Discuss the demographic and psycho-social impacts due to war situation between two countries taking any suitable example. 4M
   b) Discuss the global disaster trends of floods and volcanoes. 5M
   c) Define Climate change, explain the causes of climate change and its impacts. 5M

UNIT–IV

7. Discuss in detail about the 'Disaster management' cycle and its phases with suitable flow chart. 14M

OR

8. a) Enlist the post disaster environmental response activities and explain any four of them. 8M
   b) Discuss the roles and responsibilities of Panchayat Raj Institutions and Urban Local Bodies in DRR. 6M

UNIT–V

9. a) Describe the natural and manmade causes of land use changes in your surrounding areas taking any suitable example. 6M
   b) Discuss the sustainable developmental methods to combat climate change globally. 4M
   c) Define vulnerability and discuss how industrialization effects vulnerability of the surrounding areas. 4M

OR

10. a) Discuss any one developmental project that you like mentioning the causes of it and its immediate and long term impacts. 6M
    b) Discuss the positive and negative impacts due to dam construction on both sides of dam. 8M

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Hall Ticket Number :										

R-15

Code: 5G282

IV B.Tech. II Semester Regular & Supplementary Examinations September 2020

Utilization of Electrical Energy

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What is load equalization? With necessary illustrations, derive the expressions for motor torque for load equalization. 7M

   b) What are the methods available for starting Induction motors? Draw the connection diagram for a Star-Delta starter. 7M

OR

2. a) Discuss the various factors governing the choice of motors.. 7M

   b) A motor has to exert power starting from zero and rising uniformly to 200 hp in 10 minutes, after which it works at a constant output of 120 hp for five minutes. Two motors remains on no load for next five minutes. The load cycle starts again and is repeated indefinitely. Determine the suitable size of motor. 7M

UNIT–II

3. a) Explain skin effect and pinch effect. Compare the performance of Ajax wyatt and core-less furnace. 7M

   b) Estimate the rating of induction furnace to melt two tones of zinc in one hour. If it operates at an efficiency of 70 %, specific heat of zinc is 0.1, Latent heat of fusion of zinc is 26.67 Kcal/kg. Melting point is 455^0C 7M

OR

4. a) Define & Discuss the following terms
      i) Squeeze time ii) Weld time iii) Hold time 7M

   b) Explain the following resistance welding process
      i) Spot welding ii) Seam welding iii) Butt welding 7M

UNIT–III

5. a) Explain the following terms **i**) Lamp Efficiency **ii**) MHCP **iii**)Maintenance factor **iv**) Utilization factor **v**) Space to height ratio. 7M

   b) A lamp emits 400 lumens in all the directions. What is its MSCP? The above lamp is placed at a distance of 4 meters from a plane surface. Calculate illumination on the surface when it is (i) Normal (ii) Inclined 60^0 and (iii) Parallel to the rays. 7M

OR

6. a) Compare the merits and demerits of filament lamps and fluorescent lamps. 7M

   b) An indoor badminton court is accommodated in a hall 22 meters long, 11 meters wide and 16 meters high. The walls and ceiling of the hall are painted black and do not reflect any light. Design a scheme for providing an average illumination of 90 lux at ground surface using 200 W lamps with suitable fittings. Coefficient of utilization = 0.6, Efficiency of lamps = 20 lumens per watt. 7M

UNIT–IV

7. a) Discuss the various factors on which final choice of traction system depends. 7M

   b) Derive the relationship between acceleration, retardation, maximum speed, running time and distance between two stops assuming trapezoidal speed time curve. 7M

OR

8. a) Derive an expression for the distance travelled by an electric train using quadrilateral speed-time curve. 7M

   b) The distance between two stations is 1.92 km. The schedule speed and duration of stops respectively are 40 kmph and 20 sec. Assume quadrilateral approximation of speed-time curve. Cresting and braking retardations are 0.16 kmphps and 3.2 kmphps respectively. Determine the acceleration, if speed at end of accelerating period is 60.8 kmph. Also determine the duration of wasting period. 7M

UNIT–V

9. a) Derive expression for

   i) The tractive effort for propulsion of a train on level track.

   ii) The tractive effort for propulsion of a train up and down a gradient. 7M

   b) A 500 ton goods train is to be hauled by a locomotive up to a gradient of 1 in 40 with an acceleration of 1.5 kmphps. Determine the weight of the locomotive, if axle load is not exceeded 24 tones, coefficient of adhesion is 0.3 track resistance 45 N/ton and effective rotating masses 10 % of dead weight. 7M

OR

10. a) What is specific energy consumption? Enumerate the factors which effect the factors which effect specific energy consumption of trains operation at a given scheduled speed. 7M

    b) An electric train while going down an incline of 1 in 100 has the following speed-time curve.

       i) Starting from rest a uniform acceleration of 2 kmphps for 30 sec.
       ii) Steady speed for 40 sec.
       iii) Coasting for 50 sec. and
       iv) Braking at a rate of 3 kmphps.

    Assuming the track resistance as 40 NW per ton, allowance for rotational inertia 8 %, overall efficiency 72 %, calculate the specific energy consumption. 7M

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Hall Ticket Number :										

R-15

Code: 5G286

IV B.Tech. II Semester Regular & Supplementary Examinations September 2020

Energy Auditing and Demand side Management

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	What is energy index and How is it calculated explain its use	7M		2
	b)	Define & Explain pie-chart, Sankey diagrams.	7M		4
		OR			
2.	a)	Explain in detail about energy conservation schemes.	7M		4
	b)	Explain different the types of energy audit.	7M		2
		UNIT–II			
3.	a)	Explain the characteristics of energy efficient motors.	7M		4
	b)	Explain about variable speed and variable duty cycle systems in energy efficient motors.	7M		3
		OR			
4.	a)	What is the role of power factor on system performance and Explain the effects of harmonics on power factor.	7M		4
	b)	Explain method for the location of capacitors.	7M		3
		UNIT–III			
5.	a)	Explain about good lighting system design and practice.	7M		3
	b)	Explain light energy audit and energy instruments required for the audit.	7M		4
		OR			
6.	a)	Explain about Energy Instruments of Watt Meter & Thermocouple.	7M		4
	b)	Explain about Energy Instruments of Tongue tester & Pyrometers.	7M		4
		UNIT–IV			
7.	a)	Explain in detail about the time value of money concept and taxes and its credit.	7M		2
	b)	Explain pay back analysis. Mention its advantages and disadvantages.	7M		3
		OR			
8.	a)	Explain various depreciation methods and write its advantages and disadvantages.	7M		3
	b)	Explain different steps to develop cash flow models.	7M		4
		UNIT–V			
9.	a)	Discuss management and organization of energy conservation awareness program.	7M		4
	b)	Explain various steps in DSM planning and implementation with relevant flow diagrams.	7M		5
		OR			
10.	a)	With neat diagram explain plant level organization to implement DSM.	7M		2
	b)	Explain i) Vally filling ii)peak clipping iii) strategic energy conservation.	7M		4

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