Code No.: 40TA1

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **EEE**

Subject: **Disaster Management**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. Define environmental hazard
2. Define Cyclonic Disaster
3. Explain EOP.
4. What do the following acronyms stand for?
   a) SAARCH b) CAA
5. What is the approximate length of Himalayas?

II. Answer All Questions **10x2Mark=20 Marks**

1. What is the difference between physical and biological hazards?
2. Define Risk.
3. Explain Extra planetary Hazards.
4. What is the difference between the continental and ocean plates?
5. Write about the emergency stage of a disaster.
6. Explain Rehabilitation process.
7. What is the use of remote sensing technology in disaster management?
8. Write the objectives of WFED.
9. What are the major regions in India?
10. How disasters are monitored at village levels?

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) What do you understand by the term environmental hazards?
   b) Mention the various approaches to disaster management

OR

2. Discuss the various measures that should be taken for disaster management and prevention.
3. Write a brief note on volcanoes. What are the hazards involved?

OR

4. Write a short note on earthquakes. What are its causes?
5. Explain the provision of relief measures to affected people.

OR

6. Write a brief note on Prediction of Hazards and Disasters.
7. Write about mitigation planning. State the guidelines for mitigation of disasters.

OR

8. Discuss the role of the following institutions in disaster mitigation
   a) Meteorological observatory
   b) Hydrology Laboratory
   c) Institution of urban & regional planners
   d) Industrial Safety inspectorate
9. Write a detailed note on land subsidence, coastal, cyclonic disasters in hills.

OR

10. Discuss in detail the environmental legislations in India.

Code No.: **402E3** | **MR14**

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IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **EEE**

Subject: **Introduction To Nanotechnology**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. How the bulk nanostructuring changes the magnetic properties. Justify?
2. List out the methods to fabricate carbon tubes
3. What are the induced effects due to increase in surface area of nanoparticles?
4. Write the applications of resonant tunnelling structures.
5. Write the applications of metallization in nano technology.

II. Answer All Questions **10x2Mark=20 Marks**

1. Give two examples of two dimensional confinement
2. How Nanometer dimensions are more significant than those of atoms and bulk materials.
3. What does Fullerene mean?
4. Discuss in brief about the Laser Prolysis.
5. Write a note on nano-bio fusion.
6. Write the applications of XRD.
7. Differentiate coulomb blockade and gaint magneto resistance.
8. Describe the synthesis of semi conductors in nano electronics.
9. Write the equation for coherent tunneling.
10. Differentiate the terms oxidation and metallization.

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. Explain Electronic, magnetic and optical properties of Nanomaterials.

OR

2. Explain top-down and bottom-up approaches of nanostructure synthesis with relevant diagrams and examples.
3. How can Carbon nanotubes enable faster computers? Explain.

OR

4. Discuss the relative merits and demerits of various physical fabrication methods.
5. Explain how to characterize a material with scanning electron microscope (SEM) with neat sketch.

OR

6. Discuss briefly about nano scale characterization techniques.
7. Explain the operation of Resonant Tunneling structures.

OR

8. Explain in detail about tunneling magneto resistance.
9. Explain briefly about Electron beam lithography

OR

10. Discuss various applications of nano structured thin films.

Code No.: **402E2** **MR14**

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IV B.TECH II SEMESTER REGULAR END EXAMINATIONS, MARCH-2018

Branch: **EEE**

Subject: **EHV AC Transmission**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. What are the advantages of EHV AC Transmission?
2. Draw the distribution of surface voltage gradients on 3,4,6 and 8 conductor bundle spacing diagram.
3. Explain attenuation of travelling waves due to corona.
4. Discuss the effects electrostatic induction on energized circuit of a double circuit 3-phase AC line.
5. Draw the phasor diagram of series compensation.

II. Answer All Questions **10x2Mark=20 Marks**

1. What are resistance of conductors for EHV AC transmission system.
2. What are the different mechanical considerations in line performance and explain?
3. Explain line charge with gaussain cyclinder with neat diagram.
4. Explain the field of line charges and their properties.
5. For r=1cm, H=5m, f=50Hz, Calculate the corona loss P_C according to peek's formula when E=1.1 E_o and δ=1.
6. Explain with neat diagram of single positive and negative corona pulses.
7. What are no load voltage conditions for travelling wave theory?
8. Briefly explain Electrostatic interference?
9. What is sub synchronous resonance in series capacitor?
10. Draw the transformer filter for blocking sub synchronous currents.

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) How to minimize the damage caused due to mechanical considerations in design of EHV-AC lines.
   b) Discuss tower configurations for an EHV-AC-transmission.

OR

2. The conductor configuration of 750 kV EHV-lines are N = 4, d =3.46cm & B = 45cm.Calculate r_{eq} for this situation.

3. Explain in detail voltage gradient on sub-conductors of bundle.

OR

4. Write distribution of voltage gradient on sun-conductors of bundle.

5. Write the properties of pulse train and filter response.

OR

6. Explain different types of Audible Noise measurement and meters.

7. a) Derive an expression for traveling wave for voltage/current in EHV lines.

   b) An overhead line with Zo = 450ohms continues into a cable with Zc=100ohms. A surge with a crest value of 750kV is connected towards the junction from the overhead line. Calculate voltage in cable.

OR

8. A transmission line is 300 km long and opens at the far end. The attenuation of surge is 0.9 over one length of travel at light velocity. It is energized by (i) a step of 1000 kV, and (ii) a sine wave of 325 kV peak when the wave is passing through its peak. Calculate the open-end voltage up to 20 ms.

9. A 50-Hz 750 kV line with $L = 0.866$ mH/km is 500 km long. It is provided with 50% series compensation connected in the middle of line. The power delivered at 750 kV is 2000 MW 3-phase per circuit at unity power factor. Neglect shunt capacitance and line resistance and assume the line inductance to be lumped. Calculate (*a*) the reactance and capacitance of series capacitor, (*b*) the voltage drop across it at full load, (*c*) the current flowing through it and the voltage across it during a sustained short circuit occurring (*i*) on the source-side terminal of the capacitor, (*ii*) on the load side terminal of the capacitor, and (*iii*) across the load. (*d*) The same as in (*c*) without the series capacitor.

OR

10. a) Write short notes on various static VAR compensating (SVC) schemes?

    b) What is the purpose of synchronous condenser and how voltage profile increases using synchronous condenser?

Code No.: 40223/30223

MR14 –Regular & MR13- Supply

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IV B.TECH II SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS, MARCH-2018

Branch: **EEE**

Subject: **Fundamentals of HVDC and Fact devices**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. List out the applications of HVDC
2. Define valve rating
3. What is the conventional control strategies
4. What is loading capability limit.
5. What is single phase full wave bridge converter?

II. Answer All Questions **10x2Mark=20 Marks**

1. What is the function of DC filter
2. Write the disadvantages of DC transmission system?
3. Define transformer tap changing
4. Define twelve pulse converter with schematic diagram
5. What is sequential method of DC power flow
6. Write short notes on Synchronous condensers.
7. What are the major steps in power flow analysis
8. Draw the circuit for power flow control with variable phase angle.
9. Write the difference between single phase and 3 phase converter
10. Draw the circuit for 2 machine systems with ideal reactive compensator.

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. With neat sketches explain the different kinds of dc link available

OR

2. Write briefly about (a) Voltage control (b) Stability limits (c) Line compensation
3. Explain the power control in DC

OR

4. Differentiate between starting and stopping Dc link
5. With the block diagram, discuss the principle of operation of a basic power controller

OR

6. Explain the reactive power requirements in steady state with neat sketch
7. What are the constraint that limits the power flow and discuss the ways to overcome these limits

OR

8. Write the importance of controllable parameters
9. Write the operation of PWM converter

OR

10. What are the advantages and disadvantages of CSC over VSC