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08BEE101

B.TECH. (EEE)

VIII-SEM, (Main/back) Examination, May/June-2024

SUB: EHV AC/DC TRANSMISSION

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1._____Nil_____ 2._____Nil_____

Note: 1. Attempt any five questions selecting one question from each unit.

2. Each question carry equal marks.

UNIT-I

Q1. (a) Explain the technical and economical reasons for adopting EHV transmission system for transfer of bulk power over long distance. (6)

(b) What is meant by power handling capacity of a transmission line? (6)

OR

Q1. (a) Give the reasons in detail for using bundled conductor in EHV AC transmission. Briefly explain the properties of bundled conductor. (6)

(b) Describe the effect of electrostatic field on animals and plants. (6)

UNIT-II

Q2. (a) Two generator rated 250MW and 500MW are operating in parallel the drop characteristics of the governors are 4% and 5% respectively. How would a load of 750MW be shared between them what will be the system frequency take nominal frequency is 60HZ. (6)

(b) Explain the automatic generation control along with the block diagram. (6)

Q2. (a) Explain the flat frequency, flat tie line and tie line load bias control method of load frequency control.(6)

(b) Draw schematic diagram of a speed governing system to control the real power flow in power system and explain in brief. (6)

UNIT-III

Q.3 (a) What do you mean by reactive power give various sources of reactive power. (6)

(b) What are the types of tape changing transformers describe their function to control the voltage. (6)

OR

Q3. (a) What do you mean by shunt compensation? (6)

(b) Write note on FC-TCR. (6)

UNIT-IV

Q4. (a) Explain the working of UPFC used for power system . (6)

(b) Explain how the STATCOM is used as a FACT controller. (6)

OR

Q4. (a) Explain types of FACTS controllers. (6)

(b) Explain briefly how voltage control and reactive power control can be achieved using A TCSC-TC (6)

UNIT-V

Q5. (a) What is ground return ?What are the problems associated with the use of ground as the return conductor. (6)

(b) Explain in details the different types of DC links. (6)

OR

Q5. (a) Discuss the advantages and disadvantages of HVDC transmission. (6)

(b) With a neat schematic diagram state the various apparatus required for HVDC station and explain purpose of each. (6)

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08BEE103

B.TECH. (EEE)

VIII-SEM, (Main/back) Examination, May/June-2024

SUB: SWITCH GEAR & PROTECTION

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1._____Nil_____ 2._____Nil_____

Note: 1. Attempt any five questions selecting one question from each unit.

2. Each question carry equal marks.

UNIT-I

Q1. What is static relay and what is the basis for its development? In what way has it been successful in replacing the conventional electromagnetic relays. (12)

OR

Q1. Differentiate the characteristics of different static over-current relay by suitable graphs and block diagrams. (12)

UNIT-II

Q2. How can different distance relay characteristics be achieved with the help of amplitude as well as phase comparators. (12)

OR

Q2. Describe the advantages of poly phase relays. Discuss with the help of neat diagram the theory and principle of the operation of a poly phase relays. (12)

UNIT-III

Q.3 Explain the advantages of elliptical and quadrilateral characteristics for distance protection. How is a quadrilateral characteristics obtained with the help of static comparators? (12)

OR

Q3. Discuss the effect of power swings on the performance of distance protection. (12)

UNIT-IV

Q4. Develop expression for restriking voltage and RRRV for circuit breaker. (12)

OR

Q4. Write short note on energy balance theory and current chopping phenomenon. (12)

UNIT-V

Q5. Explain the construction of an SF6 circuit breaker. How does it essential differ from an air blast circuit breaker (12)

OR

Q5 Describe the hidden failures in power system. How digital relays can prevent/overcome it.

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08BEE104

B.TECH. (EEE)

VIII-SEM, (Main/back) Examination, May/June-2024

SUB: NON CONVENTIONAL ENERGY SOURCES

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1._____Nil_____2._____Nil_____

Note: 1. Attempt any five question selecting one question from each unit.

2. Each question carry equal marks.

UNIT-I

Q1. (a) What is role of renewable energy sources in present time for our country? (6)

(b) What are the advantages and limitations of tidal power generations. (6)

OR

Q1. (a) Mention the various conventional energy sources. Also write a short note on each source. (6)

(b) Discuss the prospects of tidal energy in India. (6)

UNIT-II

Q2. (a) Explain the construction and working of Flat plate collector. (6)

(b) Discuss different components of a basic solar power plant. (6)

OR

Q2. (a) Enumerate the different types of concentrating type collectors. Describe a collector Used in power plant for generation of electrical energy. (6)

(b) Explain the following terms related to solar radiation geometryDeclination, Hour angle and Local Apparent time. (6)

UNIT-III

Q.3 (a) Describe with neat sketch working of a geothermal power plant. (6)

(b) What is the maximum efficiency of conversion of wind machine? Discuss its principle of conversion. (6)

OR

Q3. (a) Describe basic components of a wind energy conversion system also write their functions. (6)

(b) Write the advantages of geothermal energy. (6)

UNIT-IV

Q4. (a) What is fusion reaction? What are the main fusion reactions? Which one is the most favorable reaction for power generation and why? (6)

(b) What are the advantages and disadvantages of using nuclear fusion for power generation? (6)

OR

Q4. (a) Describe various methods of plasma confinement. (6)

(b) Describe with neat sketch the working of laser fusion reactor. (6)

UNIT-V

Q5. (a) Explain the construction details and working of floating gas holder type biogas plant. (6)

(b) What is biomass? Explain the thermochemical conversion technologies of biomass. (6)

OR

Q5. (a) Explain the construction and operation of Dean Bandu bio gas plant. (6)

(b) Write short note on Ethanol production. (6)