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Question Paper Code: 49313

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Electrical and Electronics Engineering

14UEE913- HVDC TRANSMISSION

(Regulation 2014)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Valve rating is specified in terms of
(a) Average voltage value (b) Rms voltage value (c) Peak inverse voltage (d) None
2. In a Bi-polar system usually the pole is
(a) Positive (b) Negative
(c) Positive and Negative (d) Alternately positive and negative
3. Modern HVDC system are all
(a) 3-pulse converters (b) 6-pulse converters
(c) 24-pulse converters (d) 12-pulse converters
4. Short circuit ratio of an HVDC grid is
(a) Dc power flow/ KVA
(b) AC MVA/DC MW
(c) Voltage/Current at the short circuit point
(d) Short circuit MVA at converter bus rated DC power MW
5. Converter valves should be operated strictly within their _____ Rating
(a) Power (b) Voltage (c) Current (d) Both a and b

6. The difference between the current controller settings of the two stations is called
(a) Current margin (b) Voltage margin (c) Constant current control (d) Tap changer
7. There are basically _____ types of filters
(a) 3 (b) 4 (c) Five (d) 2
8. The radio interference is mainly due to the Conductor
(a) Positive (b) Negative (c) Both positive and negative (d) Metallic conductor
9. The first HVDC scheme in India is
(a) Vidhyachal back-to-back system (b) Chandrapur-padghe scheme
(c) Delhi-Rihand 500 kV system (d) Sileru –Basoor system
10. The main advantage of HVDC-VSC scheme is
(a) Both active and reactive power can controlled
(b) Does not require DC filter
(c) Can be used for very high power more than 1500 MW
(d) all of the above

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail about types of HVDC link in transmission line? (8)
12. Explain 6 pulse converter with bridge rectifier. (8)
13. Draw the converter characteristics of a HVDC link and explain the different modes of operation. (8)
14. Derive an equation for harmonic voltage and current for single tuned filter and discuss the influence of network admittance on design aspects. (8)
15. Describe the governing equations for the dc converter and controller unit. (8)