

Program: BE Electrical Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: EEC703 and Course Name: High Voltage Direct Current Transmission

Time: 1hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | Converters used HVDC for Conversion are? |
| Option A: | Dynamic |
| Option B: | Rotating |
| Option C: | Static |
| Option D: | Moving Iron |
| | |
| Q2. | For Bulk power transmission over long distance HVDCT lines are preferred, on account of |
| Option A: | Low cost of HVDCT terminals |
| Option B: | No harmonics problem |
| Option C: | minimum line power losses |
| Option D: | simple protection |
| | |
| Q3. | The longest existing HVDCT link in the world is at |
| Option A: | UK |
| Option B: | USA |
| Option C: | Sweden |
| Option D: | China |
| | |
| Q4. | In ideal commutation process angle alpha is |
| Option A: | 30 |
| Option B: | 90 |
| Option C: | 120 |
| Option D: | 0 |
| | |
| Q5. | $P_d = V_d I_d$ is the DC power at |
| Option A: | Rectifier end |
| Option B: | Inverter end |
| Option C: | Middle of DC line |
| Option D: | Transformer side |
| | |
| Q6. | The difference between the highest and the lowest values of the output waveform is |
| Option A: | Peak inverse voltage |

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| Option B: | peak to peak ripple |
| Option C: | Volt ampere rating |
| Option D: | Pulse number |
| | |
| Q7. | Which is incorrect conducting sequence of valves in 6-pulse converter |
| Option A: | 6,1 |
| Option B: | 6,4 |
| Option C: | 2,3 |
| Option D: | 1,2 |
| | |
| Q8. | Quadri valve arrangement in converter has valves in a group |
| Option A: | 1 valve |
| Option B: | 2 valves |
| Option C: | 4 valves |
| Option D: | 6 valves |
| | |
| Q9. | In a twelve pulse converter, valve connected in each phase are |
| Option A: | 1 |
| Option B: | 2 |
| Option C: | 3 |
| Option D: | 4 |
| | |
| Q10. | In converter, Overlap of currents is introduced by |
| Option A: | Source reactance |
| Option B: | Phase reactance |
| Option C: | Commutation capacitance |
| Option D: | Valve conducting |
| | |
| Q11. | Following transformers combination is used in HVDC Transmission |
| Option A: | Star-Star/Star-Delta |
| Option B: | Star-Star/Star-Star |
| Option C: | Star-Delta/Star-Star |
| Option D: | Delta-Star/Star-Delta |
| | |
| Q12. | Pole protection, DC line protection is controlled by ___ unit |
| Option A: | Master unit control |
| Option B: | System control |
| Option C: | VGC |
| Option D: | Pole unit control |
| | |
| Q13. | If AC voltage decreases slightly the inverter operates at |
| Option A: | Constant current control |
| Option B: | Minimum α control |
| Option C: | Minimum γ control |
| Option D: | Constant γ control |
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| Q14. | What are the parameters to change current and power transfer in the DC link? I) Control angle of rectifier α II) Control angle of inverter β III) Tap changer on rectifier side |
| Option A: | I alone |
| Option B: | I,II and III |
| Option C: | I and II |
| Option D: | II and III |
| Q15. | The steady state current I_d in DC link is obtained as |
| Option A: | $(E_{di}-E_{dr}) / (R_{cr}+R_d-R_{ci})$ |
| Option B: | $(E_{di}-E_{dr}) / (R_{cr}-R_d+R_{ci})$ |
| Option C: | $(E_{dr}-E_{di}) / (R_{cr}+R_d-R_{ci})$ |
| Option D: | $(E_{di}-E_{dr}) / (R_{cr}+R_d+R_{ci})$ |
| Q16. | Fault on two terminal DC power link is removed by |
| Option A: | Breaker on DC side |
| Option B: | Breaker on AC side |
| Option C: | Current control of converter |
| Option D: | both a and b |
| Q17. | During commutation in a converter, |
| Option A: | No current transferred from one valve to other |
| Option B: | current is transferred from one valve to the other |
| Option C: | voltage is transferred from one valve to the other |
| Option D: | Convertes AC to DC |
| Q18. | In order to satisfy basic requirements for better voltage regulation and current regulation it is always be advisable to assign these parameters for the converters. Under normal operations Rectifier will take care of _____ the Inverter will take care of _____ |
| Option A: | voltage,current |
| Option B: | power, voltage |
| Option C: | current, power |
| Option D: | current, voltage. |
| Q19. | shutting down the HVDC link means |
| Option A: | energization of a Bridge |
| Option B: | Deenergization of a Bridge |
| Option C: | Turning of the valves |
| Option D: | Turning on the valves |
| Q20. | In an inverter, the direct voltage across the bypass valve is normally |
| Option A: | Positive |
| Option B: | Negative |
| Option C: | Zero |

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| Option D: | Infinite |
| | |
| Q21. | The harmonics produced under balanced conditions are known as |
| Option A: | AC harmonics |
| Option B: | DC harmonics |
| Option C: | Non- Characteristic Harmonics |
| Option D: | Characteristic Harmonics |
| | |
| Q22. | Ripple current is less for higher values of the |
| Option A: | Commutating Inductance |
| Option B: | DC Reactor |
| Option C: | Converter Transformer |
| Option D: | Rating of thyristor valve |
| | |
| Q23. | Failure to ignite inspite of positive grid and anode voltages is |
| Option A: | arcback |
| Option B: | arcthrough |
| Option C: | misfire |
| Option D: | commutation failure |
| | |
| Q24. | DC Reactor is used on a DC line to diminish |
| Option A: | DC Harmonics |
| Option B: | AC Harmonics |
| Option C: | Short Circuits |
| Option D: | commutation failure |
| | |
| Q25. | This is a self clearing fault |
| Option A: | Overvoltages |
| Option B: | Commutation Failure |
| Option C: | Shortcircuits |
| Option D: | Overloads |

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| Question | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|----------|--|
| Q1. | C |
| Q2. | C |
| Q3. | C |
| Q4 | D |
| Q5 | B |
| Q6 | B |
| Q7 | B |
| Q8. | C |
| Q9. | B |
| Q10. | A |
| Q11. | A |
| Q12. | D |
| Q13. | C |
| Q14. | B |
| Q15. | C |
| Q16. | C |

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| Q17. | B |
| Q18. | D |
| Q19. | B |
| Q20. | A |
| Q21. | D |
| Q22. | B |
| Q23. | C |
| Q24. | A |
| Q25. | B |