



ANJUMAN-I-ISLAM' S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Subject: HVDC

Date: 11/9/16

Marks: 20

Duration: 1 hr

Class: BE

Branch: EE

Q .1) Explain any two

(5 marks each)

- Explain ground return, its advantages and problems.
- In a three phase rectifier, ac line to line voltage is 460V, 60Hz. The source inductance is 25 μ H. Calculate commutation overlap angle if the dc voltage is 525V and the dc power is 500kW.
- Operation of bridge converter with overlap angle in the range of 60-120 degrees is abnormal. Justify the statement.

Q.2) Explain any one.

(10 marks)

- Derive equivalent circuit of HVDC link.
- In a three phase six pulse rectifier, assume that valve 1 and 2 are conducting. Derive current transfer equation of valve 3, under the commutation of valve 1.
- Describe with neat diagram and waveform operation of 12 pulse converter. Derive V_{dc} for multi-bridge converter.



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School of Engineering & Technology 3/9/16

Subject: HVE
Class: B.E

Marks: 20
Branch: Electrical Engineering

Question number 1 is compulsory, answer any two in remaining

1. What are different dielectric materials according to physical properties explain with examples. [6M]
2. Explain avalanche theory. [7M]
3. What is primary ionization, write current equation for primary ionization. [7M]
4. Explain bubble theory for breakdown in liquids. [7M]



Subject: EMD Marks: 20 Duration: 1 HR Class: BE Branch: EE

Instructions: 1) Question no. 1 is compulsory. 2) Figures to the right indicate full marks.

Q.1) Solve any ONE from TWO [10 marks]

1) Calculate approximate overall dimensions and number of turn in primary and secondary winding for a 220 kVA, 6600/440 V, delta star connection, 50 Hz, three phase core type transformer. The following data may be assumed: emf per turn = 11V, maximum flux density = 1.3 wb/m^2 , current density = 2.5 A/mm^2 , window space factor = 0.3, overall height = overall width, Stacking factor = 0.9, use a 3 stepped core.

2) Determine the dimensions of the core and yoke for a 100 kVA, 50 hz, single phase core type transformer. A square core is used with distance between the adjacent limbs equal to 1.6 times the width of the laminations. Assume voltage per turn of 14 volts, maximum flux density 1.1 wb/m^2 , window space factor = 0.32 and current density = 3 A/mm^2 , stacking factor = 0.9, flux density in yoke is to be 80% of flux density in core.

Q.2 Solve any ONE from TWO [10 marks]

1. Derive the output equation of three phase core type transformer.
2. Comparison between shell and core type transformer

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Subject: PSOC
Marks: 20
Duration: 1 Hr
Class: BE

Date: 1/9/16

Branch: ELECTRICAL

Q.1 Attempt any two from given question

- A) Derive load flow equation.
- B) Explain input output, heat rate and incremental fuel cost curve.
- C) Explain types of buses in power system.

Q.2 Attempt any one from given question

- A) Compare GS and NR method.
- B) The fuel inputs per hour of plant 1 and 2 are

$$F_1 = 0.2P_1^2 + 40P_1 + 120 \text{ Rs/hr}$$

$$F_2 = 0.25 P_2^2 + 30P_2 + 150 \text{ Rs/hr}$$

Determine the economic operating schedule and corresponding cost of generation if the maximum and minimum loading on each unit is 100MW and 25 MW, the demand is 180 MW. If load is equally shared by each unit then determine the saving obtained by the loading as per equal incremental production cost.

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Marks: 20
Duration: 1 Hr
Class: BE

Date:

Branch: ELECTRICAL

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Subject: Control System II

Date: 2/08/2016

Marks: 20

Duration: 1-Hr/s

Class: BE

Instructions: 1) Assume the data if it is necessary.

Solve any two out of four each for 10 marks

Q1) What is lead compensation? Explain in detail design procedure of lead compensator.

Q2) What are the issues in implementing PID controllers? Explain Remedies?

Q3) What is integral Windup and Antiwindup?

Q4) Explain in brief different forms of PID controllers