



ADAMAS UNIVERSITY
END-SEMESTER EXAMINATION : JANUARY 2021
(Academic Session: 2020 – 21)

Name of the Program:	B. Tech	Semester:	VII
Paper Title :	Electrical Distribution System	Paper Code:	EEE44113
Maximum Marks :	40	Time duration:	3
Total No of questions:	9	Total No of Pages:	2
(Any other information for the student may be mentioned here)	<ol style="list-style-type: none">1. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.2. Assumptions made if any, should be stated clearly at the beginning of your answer.3. No Mobile Phones will be permitted in the Examination Hall.		

Answer all the Groups

Group A

Answer all the questions of the following

$5 \times 1 = 5$

1. a) What is the major disadvantage of phase advancer?
b) When is the shunt inductor compensation required?
c) What are the objectives of providing earth?
d) What are the general methods of voltage control?
e) Distinguish between fuse and circuit breaker?

GROUP –B

Answer *any three* of the following

$3 \times 5 = 15$

2. What is the need of the booster transformer? With the help of the circuit diagram explain the operation of booster transformer. [2+3]
3. Why is voltage control required? What are the disadvantages of tap changing transformers? Under what condition does a synchronous motor take a leading current. [1+3+3]
4. What are the advantages of using a static capacitor? Why is low lagging power factor undesirable? [3+2]
5. Derive an expression for the inductance of a Peterson coil in terms of the capacitance of the protected line. Why are isolators provided on either side of a circuit breaker? [4+1]
6. What is the major drawback of a main and transfer bus bar arrangement from the point of view of protection? What is the essential difference between a circuit breaker and an isolator? [2+3]

GROUP –C

Answer *any two* of the following

$2 \times 10 = 20$

7. a) A single-phase motor connected to a 230 volt, 50 Hz supply takes 30 A at a power factor of 0.7 lag. A capacitor is shunted across the motor terminals to improve the power factor of 0.9 lag. Determine the capacitance of the capacitor to be shunted across the motor terminals.
- b) What are the disadvantages of synchronous condenser?
- c) What are the causes of low power factor? [6+2+2]
8. a) A 50 Hz overhead line has line to earth capacitance of $1.25 \mu\text{F}$. It is used as an earth fault neutralizer. Calculate the reactance connected to neutralize the capacitance of 100% , 90% and 85% of the length of line.
- b) Define the terms: Bus bar, Feeder, Distributor and Service main. [6+4]
9. a) Describe the radial type and loop type primary feeder.
- b) What is symmetrical fault? [8+2]
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