

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

EndTerm Examination (Regular/ Backlog), November 2016

B. Tech. in Electrical Engineering, Semester V

Roll No.....

EE522: Advanced Distribution System

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

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- Q.1A Objective type multiple choice questions (10 questions @ 1 mark) 10
- i. Which of the following is usually not the generating voltage ?
(a) 6.6 kV (b) 9.9 kV (c) 11kV (d) 13.2 kV
 - ii. Which of the following is not the distribution system normally used: (a) 3 phase-4 wire
(b) 3 phase-3 wire (c) Single phase - 3 wire (d) Single phase -4 wire.
 - iii. The fact that a conductor carries more current on the surface as compared to core, is known as (a) skin effect (b) corona (c) permeability (d) Unsymmetrical fault.
 - iv. To obtain a high value of capacitance, the permittivity of dielectric medium should be (a) low (b) zero (c) high (d) unity
 - v. Length of the cable is doubled, its capacitance C will be (a) One-fourth. (b) one-half. (c) doubled. (d) unchanged.
 - vi. Maximum power transfer capability of transmission line can be increased by (a) Parallel transmission lines (b) Using series capacitance (c) Using bundled conductors (d) all of the above
 - vii. For flat voltage profile system, voltage regulation is (a) 0% (b) 100% (c) 50% (d) any of the above
 - viii. The size of the earth or ground wire is based on the: (a) maximum fault current carrying through the ground wire (b) rated current carrying capacity of the service line (c) depends on the soil resistance (d) both (a) and (c)
 - ix. The objective of earthing or grounding is: (a) to provide as low resistance possible to the ground (b) to provide as high resistance possible to the ground (c) to provide flow of positive, negative and zero sequence currents (d) none of the above
 - x. Automation normally means: (a) a net loss of jobs. (b) a net increase in jobs. (c) no change in jobs. (d) All of the above (e) None of the above.
- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- i. What are the load growth factors?
 - ii. What are the measures to reduce the flickering?
 - iii. What is reactive power?
 - iv. What is earthing?
- Q.3A Describe the structure of power system indicating the power system components and types. 05
- Q.3B Explain the load characteristics of distribution system? 05

Q.4A	What are the typical wiring and grounding problems? What are the solutions applied for these problems?	05
Q.4B	Explain the impact of harmonic distortion on motors and transformers.	05
Q.5A	Explain about Supervisory Control and Data Acquisition?	05
Q.5B	Explain the various sensors used in distribution automation?	05
Q.6A	Explain reactive power balance in power system.	05
Q.6B	How do you justify economically the connection of capacitors for the improvement of power factor?	05
OR		
Q.6B	Explain Load modeling methods.	05
Q.7A	With the help of block diagram, explain distributed power generation planning. List plan options, uncertainties and attributes.	05
Q.7B	Explain the effect of shunt compensation on distribution system?	05
OR		
Q.7B	List the various factors that affect load pattern in a power system.	05
Q.8	Describe the two techniques of load forecasting in power system.	10
Q.9A	What are the source of absorption and generation of reactive power in transmission and distribution lines?	10
Q.9B	With the help of block diagram, explain computerized management of power system.	10
OR		
Q.9B	What are the constraints observed during optimization process of power system expansion planning?	10