R09

Code No: C5602

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March 2011
DIELECTRIC AND INSULATION ENGINEERING
(POWER SYSTEMS HIGH VOLTAGE)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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1.a) Explain the concept of complex permittivity.
b) What is polarization? Explain the concept of relative permittivity. [12]

2. What is the basis of classifying insulating materials? Explain about different classes, their ranges limitations and applications. [12]

3.a) Describe various applications of SF6 as gaseous insulating material.
b) Which factors make SF6 a very good gaseous insulating material? [12]

4. Explain the "streamer theory" of break down of gases. [12]

5. Derive Paschens law. What are its applications? [12]

6.a) Describe the phenomenon of break down of gases in non uniform electric fields.
b) Explain the phenomenon of corona. [12]

7. Explain the various theories of break down in commercial insulating liquids. [12]

8. Explain the phenomenon of break down due to treeing and tracking. How can they be prevented? [12]

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