Code No: 136EA **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, November/December - 2020
SWITCH GEAR AND PROTECTION
(Electrical and Electronics Engineering)

Time: 2 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a) Explain about the Symmetrical breaking capacity.
b) Explain the working of Minimum-oil circuit breakers. [6+9]

2. Explain the working of SF6 circuit breakers. [15]

3. Write a short note on the principle of working of (a) induction relays (b) induction cup relays. [7+8]

4.a) Derive the Universal Torque equation of relay.
b) Compare static relays and electromagnetic relays. [8+7]

5.a) Explain the operation of Buchholtz relay with a neat diagram.
b) What are the abnormal conditions in a large alternator against which protection in necessary? [9+6]

6. Explain the principle of Merz-Price system of protection used for power transformers. [15]

7. Describe, with a neat diagram, a circulating-current protection scheme for a 3-phase, 1MVA, 11KV/400 volts delta-star transformer. If the current transformers have a nominal secondary current of 5 amps, calculate their ratios. [15]

8. State the external and internal causes of over voltage. Explain its ill effect in the power system. [15]

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