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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - NOV 2023**

Semester : Semester III - 2022

Course Code : EEE2016

Course Name : Sem III - EEE2016 - Electrical Machines-I

Program : B. TECH

Date : 2-NOV-2023

Time : 2:00PM - 3:30PM

Max Marks : 50

Weightage : 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. What is armature reaction in DC Generator
(CO1) [Knowledge]
2. Identify the way to increase the number of parallel paths in an armature of DC Generator
(CO1) [Knowledge]
3. State the use of Compensating Windings in a DC Generator
(CO2) [Knowledge]
4. In a d.c. power plant, power is usually supplied from several generators of small ratings connected in parallel instead of from one large generator. Mention the advantages
(CO2) [Knowledge]
5. What is Ideal commutation in DC Generator?
(CO1) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

6. Why Transformers are rated in kVA? Why Iron Losses are considered as constant losses in Transformer?
(CO1) [Comprehension]
7. While doing performance tests on DC Generator it is observed sparking near the brush contact. As an expert identify the points you will explain to the students and briefly describe the phenomena related to this occurrence with appropriate diagrams
(CO1) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

8. a-A DC shunt Generator delivers 56 amp at 440V . The resistance of the shunt field coil is 110 ohm and that of the armature winding is 0.2Ω .Compute the induced emf generated.
b-A DC shunt generator has an induced voltage on open-circuit of 127 volts. When the machine is on load, the terminal voltage is 120 volts. Compute the load current if the field circuit resistance is 15 ohms and the armature-resistance is 0.2Ω . Ignore armature reaction.

(CO2) [Application]