

Unit 8 - Week 7

Course outline

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Week 7

● DC Machines- EMF and Torque Equations & Generator Operation

● DC Machines- OCC & Load Characteristics Classification

● DC Machines - Armature Reaction

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Solutions for Assignments

Assignment 7

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-09-18, 23:59 IST.

1) Considering two 4 pole DC machines of identical armature, one is lap wound and the other is wave wound. Then the machine with more generated voltage will be, **1 point**

- Lap wound machine
 Wave wound machine
 Both have equal generated voltages
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wave wound machine

2) In a DC machine, the conductors which will cause distortion in the main field flux are, **1 point**

- Cross magnetizing armature conductors
 Demagnetizing armature conductors
 Interpoles
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Cross magnetizing armature conductors

3) The current and voltage ratings of a wave wound DC generator (as compared to a lap wound generator of identical power rating) with more than one pole pair, will be, **1 point**

- Higher, Lower
 Lower, Higher
 Lower, Lower
 Higher, Higher

No, the answer is incorrect.
Score: 0

Accepted Answers:
Lower, Higher

4) Brushes in DC machines are made up of **1 point**

- Mild Steel
 Tungsten
 Carbon
 Cast Iron

No, the answer is incorrect.
Score: 0

Accepted Answers:
Carbon

5) A 8 pole,lap wound DC generator has 40 coils with 8 turns per coils.If the machine is operated at 1500 rpm, with flux per pole of 0.022 Wb, then the generated emf is: **1 point**

- 370.8 V
 368.2 V
 389.43 V
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

6) A 4-pole lap wound shunt generator has 300 armature conductors and flux/pole of 0.1 Weber. It runs at 1000 r.p.m. The field and armature resistances are 150 Ω and 0.20 Ω respectively. Find the terminal voltage when it is loaded to take a load current of 100 A. Neglect armature reaction. **1 point**

- 479.36 V
 410 V
 512.4V
 364.8V

No, the answer is incorrect.
Score: 0

Accepted Answers:
479.36 V

7) A 6-pole wave wound shunt generator has field and armature resistances of 50 Ω and 0.1 Ω respectively. The no load voltage is 550 V. Find the terminal voltage when it is loaded to take a load current of 450 A. Neglect armature reaction. **1 point**

- 560.23 V
 503.99 V
 470.52 V
 460.36 V

No, the answer is incorrect.
Score: 0

Accepted Answers:
503.99 V

For questions 8 & 9

A permanent magnet, lap-wound dc generator has 8 poles, and 432 conductors. The rated current per conductor is 12.5 A. The no-load terminal voltage at 1600 rpm is 120 V.

8) Calculate the required flux per pole. **1 point**

- 0.0104 wb
 0.203 wb
 0.0038 wb
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.0104 wb

9) If the machine was wave wound, what would be its generated voltage (under the above mentioned conditions). **1 point**

- 532.83 V
 479.23 V
 528.22 V
 510.56 V

No, the answer is incorrect.
Score: 0

Accepted Answers:
479.23 V