

Unit 7 - Week 6

Course outline

How to access the portal?

Week 1

Week 2

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Week 6

Electromechanical Energy Conversion-II

Electromechanical Energy Conversion-III

DC Machines-Introduction, Constructional Features

Quiz : Assignment 6

Feedback Form

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Week 12

Solutions for Assignments

Assignment 6

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

Due on 2019-09-11, 23:59 IST.

For Question 1

1) Determine the force (in N) necessary to separate two surfaces with 100 cm² of contact area when the flux density normal to the surfaces is 1 wb/m².

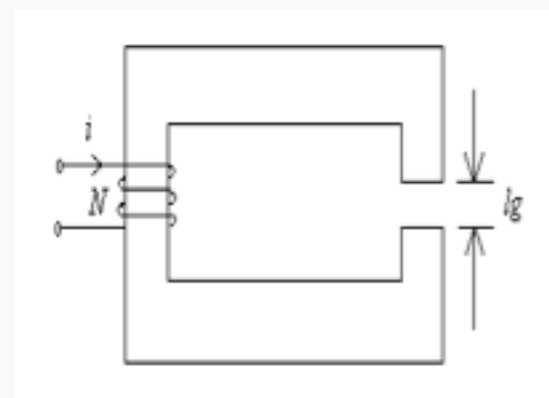
No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 3970,3990

1 point

For Question 2 and 3

The magnetic system shown in figure has the following parameters. N=500, i=2A, width of air gap =2.0 cm, depth of air gap=2.0 cm, length of air gap=1mm.



Note: Neglect the reluctance of the core, the leakage flux and the fringing flux.

2) Determine the force of attraction between both sides of the air gap.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 240,260

1 point

3) Determine the energy stored in the air gap.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.15,0.35

1 point

4) For a system with slow movement the expression for force is _____, whereas a system with fast movement the expression for force is _____.

- $\frac{dW_f'}{dx} |_{i=constant}, -\frac{dW_f}{dx} |_{\lambda=constant}$
 $\frac{dW_f'}{dx} |_{\lambda=constant}, -\frac{dW_f}{dx} |_{i=constant}$
 $\frac{dW_f'}{dt} |_{\lambda=constant}, -\frac{dW_f}{d\lambda} |_{i=constant}$
 $\frac{dW_f'}{dt} |_{i=constant}, -\frac{dW_f}{dt} |_{\lambda=constant}$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\frac{dW_f'}{dx} |_{i=constant}, -\frac{dW_f}{dx} |_{\lambda=constant}$

1 point

5) Induction machine is a _____ machine, whereas synchronous machine is a _____ machine.

- Doubly excited; Singly excited.
 Singly excited; Doubly excited.
 Doubly excited; Doubly excited.
 Singly excited; Singly excited.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Singly excited; Doubly excited.

1 point

6) In Y - Y connection of 3 phase transformer, the phase angle between the phase voltages and line voltages on both primary and secondary side is

- 0 degree
 30 degree
 60 degree
 120 degree

No, the answer is incorrect.
Score: 0

Accepted Answers:
30 degree

1 point

7) The reluctance offered to the mmf wave is lowest when

- It is aligned with the field pole axis
 It is oriented at 90 degree to the field pole axis
 Both (a) and (b)
 None of these

No, the answer is incorrect.
Score: 0

Accepted Answers:
It is aligned with the field pole axis

1 point

8) The generating action and motoring action in DC machine are decided by

- Fleming's left-hand rule, Fleming's right-hand rule
 Fleming's right-hand rule, Fleming's left-hand rule
 Both by Fleming's right-hand rule
 Both by Fleming's left-hand rule

No, the answer is incorrect.
Score: 0

Accepted Answers:
Fleming's right-hand rule, Fleming's left-hand rule

1 point

9) For low reluctance path for the flux in armature, the permeability of the material should be

- High
 Low
 Both (a) and (b)
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
High

1 point

10) For a DC machine with P number of poles, the number of parallel paths in lap winding and in wave winding are

- 2, P
 2P, P
 P, 2
 P, 2P

No, the answer is incorrect.
Score: 0

Accepted Answers:
P, 2

1 point

11) Major function of yoke (outer most cover) in a DC machine is

- To provide a low reluctance path
 To provide a high reluctance path
 Both (a) & (b)
 Does not provide path for magnetic flux

No, the answer is incorrect.
Score: 0

Accepted Answers:
To provide a low reluctance path

1 point

12) In a DC machine, the eddy current losses mainly occur in

- Windings
 Yoke
 At brush contact
 Armature

No, the answer is incorrect.
Score: 0

Accepted Answers:
Armature

1 point