

Unit 11 - Week 10

Course outline

How to access the portal?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

3 Phase Induction Machine: Constructional Features and Principle of Operation

3 Phase Induction machine: Equivalent Circuit

3 Phase Induction Machine: Speed Torque Characteristics

Testing of Induction Motor: OC and SC Test

Quiz : Assignment 10

Feedback Form

Week 11

Week 12

Solutions for Assignments

Assignment 10

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

Due on 2019-10-09, 23:59 IST.

1) If the rotor resistance of an induction motor is doubled, keeping the other parameters constant, then the maximum torque of the induction motor will **1 point** become,

- Double
- Halved
- One fourth
- Remains same

No, the answer is incorrect.
Score: 0

Accepted Answers:
Remains same

For questions 2 to 5

A 220 V, 10 HP, 4 pole, 50 Hz, star connected induction motor has a full load slip of 6 percent.

2) What is the synchronous speed of this motor? **1 point**

- 1200 rpm
- 1500 rpm
- 1000 rpm
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
1500 rpm

3) What is the rotor speed of this motor at rated load? **1 point**

- 1320 rpm
- 1480 rpm
- 1410 rpm
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
1410 rpm

4) What is the rotor frequency of this motor at rated load? **1 point**

- 3 Hz
- 2 Hz
- 4 Hz
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
3 Hz

5) What is the shaft torque of this motor at rated load? **1 point**

- 58.3 N-m
- 43 N-m
- 41 N-m
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above.

For questions 6 to 8

A 20 hp, 4 pole, 50 Hz, three phase induction motor has friction and windage loss of 3% of the output. The machine is working at full load with a full load slip of 4 percent.

6) The input power to rotor will be, **1 point**

- 14 kW
- 16 kW
- 12 kW
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
16 kW

7) The output torque of the machine will be, **1 point**

- 95.3 N-m
- 90.4 N-m
- 98.99 N-m
- 73.6 N-m

No, the answer is incorrect.
Score: 0

Accepted Answers:
98.99 N-m

8) Calculate its rotor copper loss. **1 point**

- 640 W
- 520W
- 500 W
- 480 W

No, the answer is incorrect.
Score: 0

Accepted Answers:
640 W

For questions 9 and 10

A 40 kW, 440V, 3 phase, 50 Hz, 8 pole squirrel cage induction motor has a slip of 0.03 when operated at rated voltage and frequency. It has full load line current of 68.9 A and efficiency of 89.6 %.

9) Find the power factor at which the motor operates **1 point**

- 0.85 lag
- 0.67 lag
- 0.78 lag
- 0.72 lag

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.85 lag

10) Find the shaft torque delivered to the load **1 point**

- 630 N-m
- 625 N-m
- 610 N-m
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above.