



Department of Electrical and Electronics Engineering

Subject & Subject Code: EE8005 & Special Electrical Machines

UNIT III - MCQ Bank

PERMANENT MAGNET BRUSHLESS D.C. MOTORS

1. In BLDC motor field winding is kept on _____
 - a) Stator
 - b) Rotor**
 - c) Can be placed anywhere
 - d) AbsentAnswer: b
2. Which of the following is not an advantage of BLDC motor over conventional DC motor.
 - a) Less maintenance
 - b) Long life
 - c) No risk of explosion or possibility of RF radiation
 - d) Low cost**Answer: d
3. In BLDC motor driver module, we do not require _____
 - a) SCRs
 - b) Power transistors
 - c) FETs
 - d) Transistors**Answer: d
4. In medical fields which DC motor is widely used?
 - a) PMDC
 - b) BLDC**

- c) Brushed DC motor
- d) Cannot be determined

Answer: b

5. Construction of BLDC is exactly similar to the _____

- a) Conventional DC motor
- b) Induction motor
- c) Permanent magnet synchronous motor**
- d) Totally different construction

Answer: c

6. Typical brushless motor doesn't have _____

- a) Commutator**
- b) Permanent magnet
- c) Electronic controller
- d) Fixed armature

Answer: a

7. BLDC can be used instead _____

- a) Synchronous motor
- b) Normal brushed DC motor**
- c) Induction motor
- d) Air motor

Answer: b

8. In BLDC motor armature windings are placed on the stator side.

- a) True**
- b) False

Answer: a

9. Half wave converters are used for controlling DC motor of _____

- a) Below 400 W**
- b) 400 W – 4000W

- c) More than 4000W
- d) Anywhere

Answer: a

10. How many thyristors does we need in semi-converter?

- a) 1
- b) 2**
- c) 3
- d) Many

Answer: b

11. When armature current becomes discontinuous?

- a) Small firing angles
- b) Large firing angles**
- c) Infinite firing angle
- d) Does not depend on firing angle

Answer: b

12. Full-converter can be used in DC motor for regenerative braking in _____

- a) Constant operation
- b) Variable operation
- c) Inversion operation**
- d) Opposite operation

Answer: c

13. Which converter/s can be used for DC series motor control?

- a) Semi-converters
- b) Half-wave converter
- c) Full-converter
- d) Semi converters and full converter**

Answer: d

14. Three phase converters are employed for _____

- a) Large kW motors**
- b) Small kW motors

- c) In all motors
- d) Never used

Answer: a

15. The speed of a BLDC motor can be controlled by _____

- a) Changing input DC voltage**
- b) Changing temperature
- c) Changing wind direction
- d) Cannot be controlled

Answer: a

16. Which are the advantages of BLDC motor?

- I. Low cost
- II. Simplicity
- III. Reliability
- IV. Good performance

- a) I, II, III, IV**
- b) I, II
- c) I, II, IV
- d) II, III, IV

Answer: a

17. Due to low inertia, BLDC motors have _____

- a) Faster acceleration**
- b) Slower acceleration
- c) High-cost
- d) Low cost

Answer: a

18. Which of the following are the types of BLDC motor?

- a) Unipolar, Bipolar**
- b) Unipolar, PWM
- c) Bipolar, PWM
- d) Synchronous, Induction

Answer: a

18. Which of the following statement is not true regarding to DC chopper?

- a) Cheap
- b) Fast response
- c) Regeneration
- d) AC to DC control**

Answer: d

19. The average value of chopper output waveform is given by _____

- a) αV**
- b) V/α
- c) $\alpha 2V$
- d) $V/\alpha 2$

Answer: a

20. Increasing the stator poles _____ the speed of Reluctance motor.

- a) Decreases**
- b) Increases
- c) Remains the same
- d) Negative

Answer: a

21. Calculate the circuit turn-off time for 3- Φ Fully controlled rectifier if the firing angle is 120° and supply frequency is 60 Hz.

- a) 1.8 msec
- b) 3.2 msec
- c) 6.3 msec
- d) 2.7 msec**

Answer: d

22. Calculate peak-peak voltage if $V_{\max}=180$ V and $V_{\min}=60$ V.

- a) 120 V**
- b) 150 V
- c) 170 V
- d) 110 V

Answer: a

23. Calculate the value of Crest factor if $V_{\text{peak}}=798 \text{ V}$ and $V_{\text{r.m.s}}=489 \text{ V}$.

- a) **1.63**
- b) 1.54
- c) 1.59
- d) 1.26

Answer: a

24. Reluctance motor operates at power factor of _____

- a) **.8**
- b) .2
- c) .3
- d) .9

Answer: a

25. Calculate the value of the frequency if the inductive reactance is 60Ω and the value of the inductor is 4 H.

- a) **2.38 Hz**
- b) 5.54 Hz
- c) 4.65 Hz
- d) 9.42 Hz

Answer: a