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Instructions:
   (i)   *Read the question properly and answer accordingly.*
   (ii)   *Question paper consists of 3 parts.*
   (iii)   Scientific and Non-programmable calculators are permitted

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Part A

(2 Q x 5 M = 10 Marks)

1. For variable frequency control of induction motor explain the following points:

   a. For speeds below base speed (V/f) ratio is maintained constant, why?

   b. For speeds above base speed, the terminal voltage is maintained constant, why?

2. What are the various motors used in textile mill drives? Comment your answer.

Part B

(3 Q x 7 M = 21 Marks)

3. Why the load commutated inverter fed synchronous motor drive is found suitable for high speed and high power applications? Describe the operation.

4. Explain the different motor drives used in a rolling mill drive.

5. How to control the speed of induction motor using current source inverter?

Part C

(1 Q x 9 M = 9 Marks)

6. What is meant by slip power recovery scheme? Explain in detail about the slip power recovery schemes of induction motor.

PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF ENGINEERING

Weightage: 20%   Max Marks: 20   Max Time: 1 hr.   28 March Wednesday 2018

TEST – 2   SET A

Even Semester 2017-18   Course: **EEE 304 Electrical Drives**   VI Sem. Electrical

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Instruction:

  (i) *Read the question properly and answer accordingly.*
  (ii) *Question paper consists of 3 parts.*
  (iii) Scientific and Non-programmable calculators are permitted

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Part A

(2 Q x 2 M = 4 Marks)

1. How to determine the motor rating for continuous duty and short duty load?

2. Write the differences between semi converter control of DC drive and full controlled control of DC drive.

Part B

(2 Q x 5 M = 10 Marks)

3. A 220 V, 750 rpm, 110 A separately excited DC motor has an armature resistance of 0.08 ohm. It is fed from a 1-phase fully controlled rectifier with an ac source voltage of 230 V, 50 Hz. Assuming continuous conduction, calculate firing angle at rated motor torque at 570 rpm and -300 rpm.

4. How to achieve four quadrant operation of DC separately excited motor using controlled rectifier.

Part C

(1Q x 6 M = 6 Marks)

5. Draw the speed versus torque characteristics of a 3-phase full controlled rectifier fed DC separately excited motor with relevant equations and waveform when $\alpha = 30^0$.

PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF ENGINEERING

Weightage: 20 %   Max Marks: 20   Max Time: 1 hr.   20 Feb Tuesday 2018

TEST – 1

Even Semester 2017-18   Course: **EEE 304   Electrical Drives**   VI Sem. EEE

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Instruction:
   (i)   *Read the question properly and answer accordingly.*
   (ii) *Question paper consists of 3 parts.*
   (iii) Scientific and Non-programmable calculators are permitted

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Part A

(2 Q x 2 M = 4 Marks)

1. Define different components of load torques with characteristics.

2. What do you understand by the steady state stability of a drive system? Give an example?

Part B

(2 Q x 5 M = 10 Marks)

3. Describe the necessity of thermal model of motor for heating and cooling.

4. Draw and explain the four quadrant operation of motor driving a hoist load.

Part C

(1Q x 6 M = 6 Marks)

5. What is load equalization? A motor equipped with flywheel has to supply a load torque of 600 N-m in 10 sec followed by a no load period long enough for the flywheel to regain its full speed. It is desired to limit the motor torque to 450 N-m. What should be the moment of inertia of the flywheel? The no load speed of the motor is 600 rpm and it has a slip of 8% at torque of 400 N-m. Assume the motor speed-torque characteristic to be straight line in the range of operation. Motor has an inertia of 10 kg-m^2.