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VI Semester Diploma Examination, Nov./Dec. 2016
INDUSTRIAL DRIVES & CONTROL

Time : 3 Hours]

[Max. Marks : 100

Note : (i) Section – I is compulsory.

(ii) Answer any two full questions from the remaining Sections – II, III & IV.

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SECTION – I

1. (a) Fill in the blanks :

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- (i) Free running is absent in _____ traction service.
- (ii) _____ converts AC voltage of one frequency into AC voltage of another frequency.
- (iii) Static equipments require _____ maintenance than rotating equipments.
- (iv) Area of speed-time curve represents _____.
- (v) Rheostatic braking is also called as _____.

(b) Draw the block diagram of an electric drive.

FOXY ORO

BY BETA CONSOLE

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BETA CONSOLE SECTION – II

2. (a) Draw the process flow diagram of sugar mill and explain.

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(b) Select suitable drive motor for the following and justify the same :

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- (i) Cane cutter
- (ii) Cane crushing mills

3. (a) Draw the block diagram of 3-phase fully controlled rectifier fed DC drive and explain its operation.

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(b) Define an electric drive and list the types.

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4. (a) Draw the process flow diagram of cement mill for dry process and explain.

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(b) List the advantages of electric drives.

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SECTION – III

5. (a) Draw the block diagram of cycloconverter fed synchronous motor and explain its operation.
 - (b) Write any five basic factors to be considered in selecting a motor for a particular application.
 - (c) What are the functions performed by the power modulator ?
6. (a) List the advantages of electric traction.
 - (b) Explain speed-time curve for city services.
 - (c) Explain with diagram current collection through single arm pantograph.
7. (a) Explain with a diagram the chopper controlled drive for DC motors with composite braking for DC traction system.
 - (b) State the factors affecting the value of co-efficient of Adhesion.

SECTION – IV

8. (a) Define preventive maintenance and state the benefits obtained from it.
 - (b) State the differences between open loop and closed loop control system.
 - (c) Draw the symbols for the following :
 - (i) Start type push button
 - (ii) Stop type push button
 - (iii) Coil
9. (a) Explain ladder diagram and wiring diagram with an example of 3-phase Induction motor starter. 10
 - (b) Describe an automatic control system with an example. 5
10. (a) List the advantages of distributed control system. 5
 - (b) State the functional requirement of distributed process control system. 5
 - (c) Write ladder diagram for controlling a 3-phase induction motor with DOL starter from one location. 5