S.B. Roll No……

MODERN ELECTRIC TRACTION
6th /Elect/5235/Nov'15

Duration: 3 hrs **M.Marks =75**

SECTION A

Q1 Fill in the blanks: **10x1.5=15**

i. _____system is preferred for main Line railway service
ii. Single phase low frequency a.c. system uses _____motor
iii. In dc locomotive supply voltage at starting is reduced by _____
iv. Steam engine drive _____initial cost as no track electrification is needed
v. In India voltage used for overhead supply for trains is _____
vi. _____is provided on the roof of the locomotive to disconnect the locomotive in case of fault in the equipment
vii. In _____breaking, electrical energy is fed back to supply.
viii. In train lighting system, dynmo has to operate in ____with batteries
ix. In motor generator set induction motor is _____
x. _____smoothen out the ripples in the dc output of rectifier.

SECTION B

Q.2. Attempt any FIVE questions: **5x6=30**

I. What are the advantage of electric drive and limitation of electric drive?
II. Compare AC and DC system of traction.
III. What is meant by specific energy consumption and what factors affect the same?
IV. Discuss briefly the method of speed control of single phase a.c. series motors.
V. Explain the crest speed average speed and schedule speed?
VI. Write short note on **(a)** Section and parallel post
(b) Subsection and post
VII. Describe the various types of air conditioning installation used in Indian railway coaches?

SECTION C

Q.3.Attempt any THREE questions: **3x10=30**

I. Explain the working of single battery system? Also discuss the advantages of single battery system?
II. Explain with neat sketch the block diagram of an electric locomotive?
III. What are the major equipment of a dc substation?
IV. Write short note on the following
a. Plugging **b.** regenerative breaking **c.** Rheostatic Breaking