Q.28 Explain the End of generation in Train lighting System.

Q.29 Explain kando system.

Q.30 Enlist the various equipment used in railway coach air conditioning.

Q.31 Enlist any five points of maintenance of batteries used in railway.

Q.32 Explain the desirable characteristics of the insulator used in traction system.

Q.33 Give the constituents of substation used in traction system.

Q.34 Explain main line service.

Q.35 Give the types of Electric traction system.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the working of Electric locomotive with the help of a block diagram.

Q.37 Explain the Double battery Parallel block system used in train lighting system.

Q.38 Explain the desirable characteristics of the traction motor.

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6th Sem. / Electrical Engineering
Subject:- Modern Electric Traction System

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 During the_____period the power supply to the motor is cut off and train is allowed to run due to its own momentum.

a) Free running b) Notching up
c) Coasting d) Breaking

Q.2 Motor used In traction system is

a) Squirrel cage Induction Motor
b) Dc shunt Motor
c) Dc series Motor
d) Synchronous motor

Q.3 In single phase to Dc system supply used is

a) 25 KV, 50 hz b) 16 KV, 25 HZ
c) 33 KV, 50 HZ d) None of these

Q.4 In Electric traction, Coefficient of adhesion is represented by

a) **Φ** b) **λ**
c) **Y** d) **μ**

Q.5 The speed-time curve for the urban service has no

a) Coasting period b) Free running Period
c) Acceleration Period d) Breaking Period

Q.6 _____breaking is used where load on the motor has very high inertia.
a) Regenerative Breaking
b) Rheostat Breaking
c) plugging
d) None of these

Q.7 Battery operated trucks are used in
a) Steel mills
b) Power stations
c) Narrow gauge traction
d) Factories for material transportation

Q.8 Tractive effort is required to
a) Overcome component of train mass the gravity
b) Overcome friction, windage and curve resistance
c) Accelerate the train mass
d) all of the above

Q.9 System used for train lightning is
a) Single Battery system
b) Double Battery parallel block System
c) Modified System
d) All of the above

Q.10 An ideal traction system should have
a) Complex speed control
b) Low starting tractive effort
c) Equipment capable of withstanding large temporary loads
d) All of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Expand EMU.

Q.12 O.H.E stands for_____

Q.13 There is no free running period is Sub urban service (T/F)

Q.14 Give the types of Electric Breaking System.

Q.15 Tell the principle of linear induction Motor.

Q.16 Define Traction Effort.

Q.17 Define Coasting.

Q.18 Define Schedule speed of train.

Q.19 Give the composition of OHE

Q.20 Give the formula of Specific energy consumption.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the Speed time curve of a train.

Q.22 Explain the factors affecting traction effort.

Q.23 Give any five advantages of Electric traction system.

Q.24 Give the advantages of series parallel control of Electric traction motors.

Q.25 Explain regenerative breaking.

Q.26 Compare mechanical and electric breaking system.

Q.27 Explain the role of catenary in Electric traction system.