Section-C

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

Q.21 What are the various measuring instruments and their applications?

Q.22 Describe the working and construction of a wattmeter.

Q.23 Write a short note on fuse and relay.

Q.24 What is static electricity and how it is handled in airplanes?

Q25 What is the role of a rectifier? How these are fabricated?

Q.26 What is the difference between AC and DC generator?

Q.27 How does a Current Limiter work?

Q.28 What is the parallel operation of Generators?

Q.29 What is a repulsion motor and its applications.

Q.30 What is Static Discharge Wick?

Q.31 What are landing light circuits? Where are their specifications?

Q.32 What are the different types of Transformers used?

Q.33 How are the batteries transported?

Q.34 How do we charge a lead acid battery?

Q.35 What are various types of filters and their use?

Section-D

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

Q.36 Explain the principle, working and types of AC motors.

Q.37 Describe the operation and construction of different transformers.

Q.38 Describe the various batteries in brief. Explain the importance and usage of various types of filters.

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5th Sem., Branch : AME
Subject : Aircraft Electrical Systems

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 Identify the principle behind the working of an a.c. generator.

a) Eddy currents
b) Faraday's law
c) Lenz's law
d) Electromagnetic induction

Q.2 EMF and torque produced in a DC machine are proportional to _____ and _____respectively.

a) Armature speed and armature emf
b) Armature emf and armature speed
c) Armature current and armature emf
d) Armature speed and armature current

Q.3 What is the full form of MCB?

a) Miniature contact breaker
b) Mini circuit breaker
c) Miniature circuit breaker
d) Mini contact breaker

Q.4 When a compressive force is applied to a quartz crystal then _____.

a) Positive charges are induced
b) Negative charges are induced
c) No charge is induced
d) Both positive and negative charges are induced

Q.5 In a DC generator the ripples in the direct emf generated can be reduced by _____.

a) Using conductor of annealed copper
b) Using commutator with large number of segments
c) Using carbon brushes of superior quality
d) Using equalizer rings

Q.6 What advantage does electrical energy offer over fossil fuels in terms of environmental impact?

a) Electrical energy emits more greenhouse gases
b) Electrical energy requires extensive drilling and mining operations.
c) Electrical energy is renewable and produces fewer emissions during use.
d) Electrical energy is more expensive to produce than fossil fuels

Q.7 What economic advantage does electrical energy offer over traditional energy sources like coal and oil?

a) Electrical energy is more expensive to produce
b) Electrical energy requires less maintenance and has lower operating costs.
c) Electrical energy has limited availability and is subject to price fluctuations.
d) Electrical energy contributes to higher levels of pollution, leading t o increased healthcare costs.

Q.8 Which of the following is an example of a major application of electricity in transportation?

a) Electric cars powered by rechargeable batteries
b) Steam locomotives fueled by coal
c) Diesel-powered airplanes
d) Gasoline-powered motorcycles

Q.9 The transformer ratio is defined as :

a) The ratio of input voltage to output voltage
b) The ratio of output voltage to input voltage
c) The ratio of input current to output current
d) The ratio of output current to input current

Q.10 Which equation represents the electromotive force (EMF) equation of a transformer?

a) $V = IR$ b) $V = L(di/dt)$
c) $V = N(d\Phi/dt)$ d) $V = I/R$

Section-B

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

Q.11 What is a moving coil?
Q.12 What is the role reverse current breaker?
Q.13 What is Coronna threshold?
Q.14 How does carbon pile affect the performance?
Q.15 What do you mean by lacing?
Q.16 What is a vibrating type voltage regulator?
Q.17 What is a frequency meter used for?
Q.18 Where is rectifier used?
Q.19 What is the role of CHT circuit?
Q.20 What do you mean by battery rating?