SECTION-C

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

Q.21 What is a propeller and its types? What do you mean by tractor?

Q.22 What are the different engine mounting methods?

Q.23 Describe the properties of fuel used in piston engines.

Q.24 What is a thermocouple and its use?

Q.25 What is the need of a super charger?

Q.26 Explain the working of starting system of an engine.

Q.27 Describe the common sources of oil and fuel contamination?

Q.28 Explain the use of magnetos in aircraft.

Q.29 Explain propeller feathering.

Q.30 Write a brief note on engine instruments.

Q.31 What are different types of superchargers?

Q.32 Describe the propeller controls?

Q.33 Differentiate between Propeller type and Jet Engine.

Q.34 How is run out check of a crank shaft done?

Q.35 Explain various RPM indicators?

SECTION-D

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

Q.36 Explain the various subsystems used in the aircrafts engines with their characteristics and domain of use.

Q.37 Briefly explain all the types of sensors and instruments used in aircraft related to engines.

Q.38 Explain the working of engine starters and carburetor.

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Roll No. .....

4th Sem.

Branch : Aircraft Maintenance

Sub. Aircraft Reciprocating Engine

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 The compression ratio of the compressor is always _____ unity

a) Equal to b) Less than

c) More than d) None of the above

Q.2 What is the primary function of the cooling system in a piston engine?

a) To increase engine speed

b) To reduce friction between moving parts

c) To maintain an optimal operating temperature and prevent overheating

d) To enhance fuel efficiency

Q.3 During a pre-flight check, a pilot finds that the feathering mechanism of a propeller is not functioning. What immediate issue could this cause in flight?

a) Inability to start the engine

b) Increased fuel efficiency

c) Inability to minimize drag in the event of an engine failure

d) Enhanced propeller performance

Q.4 Which component of the propeller system is primarily responsible for controlling the pitch of the blades?

a) The propeller hub
b) The control lever in the cockpit
c) The governor
d) The spinner

Q.5 Compression ratio of I.C. engine is

a) The ratio of volumes of air in cylinder before compression stroke and after compression stroke.
b) Volume displaced by piston per stroke and clearance volume in cylinder.
c) Ratio of pressure after compression and before compression.
d) Swept volume / cylinder volume

Q.6 A pilot reports difficulty in starting the engine suspecting as issue with the ignition system. Which component should the mechanic check first?

a) The oil filter
b) The fuel tank
c) The spark plugs and magnetos
d) The exhaust manifold

Q.7 How does a supercharger improve the performance of an aircraft engine at high altitude?

a) By reducing the engine's weight
b) By increasing the amount of oxygen available for combustion
c) By lowering the fuel temperature
d) By decreasing the engine's RPM.

Q.8 Why more number of small cylinders is used instead of one big cylinder?

a) To generate more power b) To uniform power
c) To reduce load d) To increase torque

Q.9 What is the reason for using hydraulic valve lifters in an aircraft engine?

a) Hydraulic valves are fast
b) Hydraulic valves are cheap
c) Valves have minimum wear and tear
d) None of the above

Q.10 What is the purpose of valve overlap in reciprocating engine?

a) Using the inertia of exhaust gases to induct fresh charge
b) To avoid locking of the valves
c) Both of the above
d) None of the above

SECTION-B

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

Q.11 Which one of the two or four stroke engine is more efficient?

Q.12 What type of fuel flow and fuel quantity gauges are used?

Q.13 Where is pitch of propellers?

Q.14 How are the faults detected in an engine?

Q.15 Where are engine starter characteristics?

Q.16 Where the fuel and air is mixed?

Q.17 What is a supercharger?

Q.18 What is a manifold pressure?

Q.19 What is special about aircraft piston engines?

Q.20 How the RPM of engine is measured?