

ANSWER KEY TO REVIEW QUESTIONS:

1- What are the disadvantages of a radial engine?

Poor visibility and high parasite drag.

2- What is the function of the two cylinder valves?

The intake valve allows the fuel-air mixture to be drawn into the cylinder ; the exhaust valve allows the burn gases to be expelled through the exhaust system.

3- What is “timing”?

Because the opening and closing of valves requires a certain amount of time, they are adjusted to open early (lead) and close late (lag) so as to ensure a complete intake and complete evacuation of the cylinder.

4- What is the positioning of the valves and piston at the beginning of the intake stroke?

At the beginning of the intake stroke, the intake valve is open, the exhaust valve is closed and the piston is at TDC (Top Dead Centre of the cylinder) ready to move down.

5- Why does a lean mixture result in higher engine temperatures?

The mix burns more slowly which exposes the cylinder walls to high temperatures for more time.

6- What are seven reasons to lean the mixture?

Better fuel economy, better engine performance, better engine efficiency, longer range, less spark plug fouling, adequate engine temperature, cleaner cylinders.

7- What does grade 100/130 tell a pilot about the composition of the fuel?

Grade 100/130 indicates that the fuel has an octane content of 100 for a lean mixture and 130 for a rich mixture.

8- What is the quickest way to prevent or eliminate detonation?

Enrichen the mixture

9- Why is it important to properly synchronise ignition?

The spark plugs must fire at the proper moment; otherwise damage such as loss of power, overheating leading to detonation, pre-ignition, burnt pistons, scored cylinders and broken rings.

10- Fine pitch gives better performance in which phases of the flight? Take-off and climb.