

## Weaknesses

Very few candidates attempted this question and those who attempted did not answer the question correctly. This indicates that the functions of aircraft hydraulic components has not been covered properly in tuition. The candidates were not familiar with undercarriage indications when in transit between up and locked, down and locked and not locked.

## Expected responses

Functions of a hydraulic system selector valve should include the following:-

- Control direction of movement of actuating unit.
- Provide a pathway for simultaneous flow of hydraulic fluid into and out of connected actuating units.
- Provides a means of immediately and conveniently switching the direction of which the fluid flows through the actuation reversing the direction of movement.
- Provides hydraulic lock when the actuation is completed.

Functions of a hydraulic system accumulators include:

- Dampen pressure surges in the hydraulic system caused by actuation of the unit and the effort of the pump to maintain pressure at a present level.
- Aid or supplement the power pump when several units are operating at once by supplementing extra power from accumulated or stored power.
- Store power for limited operating of a hydraulic power unit when the pump is not operating.
- Supply fluid under pressure to compensate for internal leaks.
- To compensate for thermal expansion.
- To prevent too sudden cut ins and cuts outs pressure and pressure relief valves.

In part (c) candidates were required to outline what a pilot must look for to determine the state of undercarriage at take off and landing. When the undercarriage is up and locked after take-off the red lights and back up lights go off and there is no audio warning. When the undercarriage is down and locked before landing green lights go on, red light are off and there is no audio warning. When the undercarriage is not locked red light and back uplights are on, green lights are off and there is audio warning.

## Question 13

With the aid of labelled sketches, explain the operation of an aircraft vertical speed indicator during:

- (a) level flight
- (b) ascending

(15 marks)