Chapter 7

SAMPLE QUESTIONS - DC

1. Resistance of any material varies with;

a) the type of material and its cross sectional area
b) the length of the material and its temperature
c) both answers a and b are correct

2. Ohm's law formula is;

a) V = IR
b) I = VR
c) $E = I^2R$

3. The units of 'Power' in DC circuits is expressed as:

a) amps
b) volts
c) watts

4. If the amount of current flowing in a circuit was written as 2×10^{-3} amps, this could be said to be;

a) 2 amps
b) 2 milliamps
c) 2 microamps

5. The behavior of magnetic flux in a magnet or focusing core is described by the word;

a) Lux
b) Luminums
c) Hysteresis

6. The magnitude of the VOLTAGE (EMF) produced by a generator is dependent upon:

a) the size of the magnetic poles
b) the strength of the magnetic field
c) the cross sectional area of the conductors in the field

7. Electrical pressure:

a) is measured in amps
b) is the EMF
c) is the rate of current flow

8. There are two types of ammeters in general use. The load (left zero) type indicates current flow from the generator but the centre zero ammeter indicates current flow :-

a) to the generator.
b) from the battery only.
c) to or from the battery.

9. A negative indication on a centre zero ammeter means :-

a) the battery is being charged by the generator.
b) the generator is supplying the battery.
c) the battery is discharging.

10. A 'short circuit' means :-

a) there is a circuit fault and the system will draw less current.
b) there is a circuit fault and the system will draw more current,
c) the electricity will take a shorter path so the electrons will flow quicker.

11. A short circuit between an electrical supply and earth :-

a) will not affect a system which uses an earth return.
b) is potentially dangerous because excess current will flow.
c) will always cause the circuit breaker to 'pop' so it will never be a problem.

12. The best method of testing a battery is to :-

a) connect an ammeter in series under load..
b) connect a voltmeter in series without a load.
c) connect a voltmeter in parallel with a load resistor.

13. If a battery has a low state of charge :-

a) the voltage will decrease under load.
b) a voltage increase will occur as less current is flowing.
c) the current will increase as the voltage falls.

14. What is the purpose of earthing?

a) to provide a return path for current from aircraft electrical equipment through the aircraft metal frame.
b) to discharge static electricity to the ground so the aircraft does not have to be earthed for refuelling.
c) to discharge static electricity to the atmosphere which helps reduce radio noise.

15. A DC supply can be converted to AC by using :-

a) a rectifier.
b) an inverter.
c) a transformer.

16. An AC supply can be converted to DC by using :-

a) a rectifier.
b) an inverter.
c) a transformer.

17. The 'specific gravity' of the electrolyte of a 'lead acid' battery :-

a) never changes.
b) changes only with temperature.
c) changes with the state of charge and so is a measure of the state of charge.

18. The state of charge of a battery can be measured by :-

a) a voltmeter under load conditions.
b) a hydrometer only.
c) a battery's physical condition.

19. If two 12 volt batteries are connected in parallel, they will produce :-

a) 12v and a total current twice the capacity of each battery.
b) 24v and a total current of twice the capacity of each battery.
c) 24v and a total current the same as the capacity of each battery.

20. If two 12 volt batteries are connected in series, they will produce :-

a) 12 v and a total current twice the capacity of each battery.
b) 24v and a total current of twice the capacity of each battery.
c) 24v and a total current the same as the capacity of each battery.

21. When a battery check is carried out during 'pre-flight' :-

a) some equipment should be turned on to check for excessive voltage drop.
b) no load should be put on the system because it would cause the voltage to decrease.
c) the load or no load condition is not important.

22. A voltage regulator, regulates a generator output by controlling the :-

a) circuit resistance of the generator output line.
b) current flow in the generator field windings.
c) RPM of the armature.

23. After a difficult start (two or three attempts) the battery will :-

a) completely recharge within 5 minutes.
b) draw a large current for at least 20 minutes as it recharges.
c) draw a large current for 5 - 10 minutes, then this current should decrease.

24. As an aircraft battery becomes charged :-

a) the generator voltage reduces to prevent overcharging.
b) the potential difference between the battery and the generator decreases as the battery voltage increases..
c) the RCR prevents the battery discharging through the generator.

25. If the generator or alternator were to fail in flight, to conserve battery power the pilot should :-

a) switch the master switch off immediately.
b) 'load shed' by switching off non-essential equipment.
c) not take any immediate action as the battery will last at least 20 minutes.

26. The term 'open circuit' means :-

a) that circuit current is likely to increase.
b) the equipment is likely to overheat.
c) that the electricity is no longer supplied to the circuit.

27. If a battery is rated as 32 ampere-hours, this implies that it can supply :-

a) 32 amps for 1 hour.
b) 32 amps for 10 hours.
c) 3.2 amps for 10 hours.

28. A relay (solenoid) is:

a) a mechanical switch, pilot operated
b) a temperature sensing device
c) an electro magnetic switch, remotely operated

29. The electrolyte in a Nickel Cadmium battery is

a) sulphuric acid and distilled water
b) hydrochloric acid and distilled water
c) potassium Hydroxide and distilled water

30. In any DC motor

a) the field is kept constant
b) weakening of the field causes the armature speed to increase
c) weakening of the field causes the armature speed to decrease
d) weakening of the field will have no effect on the armature speed