



Headquarters Air Cadets Examination

Senior Cadet
35/3 Adv Radio & Radar
Generated 17-Jul-00

Serial: 259

1. Use black or dark blue pen, NOT pencil.
2. Mark one answer per question with a cross.
3. If you wish to change an answer, cancel the original mark and mark another single answer.

A selected answer.

A cancelled answer.

Mark:

Name and Initials _____

Date of Exam _____

Date of Birth _____

Squadron/Unit _____

Wing _____

- 1 A pulse radar calculates the target range, using:
- a The height of the blip on its range display
 - b The time between transmitted pulses
 - c The time between a transmitted pulse and a received pulse
 - d A transmitted pulse long enough to reach the target

- 2 In a primary radar installation, the master timing unit:
- a Demodulates repetition frequency pulses to give video pulses for the CRT display
 - b Produces pulses of repetition frequency energy at the required power level, to drive the aerial
 - c Controls the firing of the transmitter and synchronises the start of the timebase
 - d Switches the timebase generator on or off controlling transmission and reception of pulses

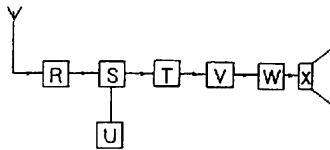
- 3 How many Bean cans would you need for an effective two-way communication system:
- a 3
 - b 5
 - c 1
 - d 4

- 4 300 m/s is the speed of?
- a Electrons
 - b Light
 - c Sound
 - d Air

- 5 One advantage of em waves is:
- a They travel a long way for a set power
 - b They travel a long way for a given power
 - c They travel a short way for a given power
 - d They travel forever for a set power

- 6 If the velocity of radio waves is 300,000,000 metres per second, what would the value of the wavelength be for a wave of frequency 30 Mhz:
- a 10 metres
 - b 100 metres
 - c 1 metre
 - d 1000 metres

- 7 What does the block marked V represent on the diagram:
- a Demodulator
 - b RF Amplifier
 - c Mixer
 - d Local Oscillator



- 8 What type of circuit is used to recover FM signals:
- a Recoverer
 - b Recriminator
 - c Modulator
 - d Discriminator

- 9 A radar using doppler effect calculates the target's distance by:
- a Measuring the shift in frequency
 - b Measuring the target's change in position
 - c Measuring the time taken
 - d Measuring the length of the return pulse

- 10 What is IFF used for?
- a Tells everyone you are friendly
 - b Alerts ATC of the direction of flight
 - c Tells other pilot your aircraft is airworthy
 - d Tells the pilot how many passengers are on board

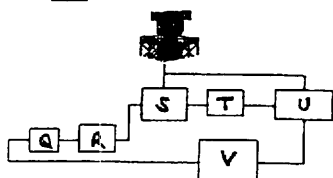
- 11 What does code 7700 mean in SSR usage:
- a Highjack
 - b Loss of radio communications
 - c SOS
 - d Height information

- 12 A PPI display is:
- a A radial trace in time with the target
 - b A radial trace in time with the radar
 - c A timebase trace
 - d A rotary trace

- 13 The slant triangle is made up of:
- a Slant range, target and ground range
 - b Angle of elevation, height and target velocity
 - c Slant angle, ground angle and target angle
 - d Slant range, height and ground range

14 In this block diagram of a radar system, what does the block marked S represent:

- a RX
- b T/R switch
- c TX
- d MTU



15 Which radar employed by the RAF can be rotated to serve the runway in use:

- a PIR
- b PAR
- c PER
- d PUR

16 The PAR consists of 3 distinct assemblies, the azimuth antenna, radar cabin and which other:

- Equipment module
- Elevation module
- Tilting module
- Range finder

17 At what distance could a pilot use ILS:

- Under 5 nautical miles only
- Over 50 nautical miles
- At 1 nautical mile only
- Within 25 nautical miles

18 Which of the following is information supplied to a pilot from ILS:

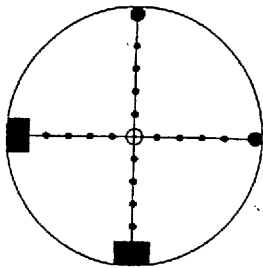
- Direction of prevailing wind
- Airfield's height above sea level
- Diversion airfields
- Airfield identification

19 ILS is made up of three elements, marker beacons, glide path and which other:

- Marker buoys
- Localiser
- Airfield lights
- Distance data

20 In the diagram, what state is displayed

- a Flags not set - signal strength low
- b Flags not set - signal strength high
- c Flags set - signal strength low
- d Flags set - signal strength high



21 The RAF uses which equipment for direction finding:

- a DRDF
- b DADF
- c DTAF
- d DFAC

22 There are two main control centres used in the DRDF system, one is Prestwick, the other is at:

- a West Drayton
- b West Ham
- c West Watton
- d West Raynham

23 The pilot of an aircraft receives distance, bearing and which other information from TACAN:

- a Altitude
- b Height
- c Azimuth
- d Beacon identification

24 What types of information are carried on DCN:

- a Operational, meteorological and administration
- b Operational, personal and administration
- c Personal, meteorological and administration
- d Operational, tactical and administration

25 RAF FTS has two sub-systems, one is called Uniter the other is called:

- a Foxer
- b Boxit
- c Boxer
- d Boxed