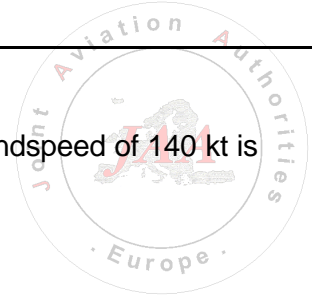


NAVIGATION (2) RADIO NAVIGATION



- 1 An aircraft is "homing" to a radio beacon whilst maintaining a relative bearing of zero. If the magnetic heading decreases, the aircraft is experiencing:
- A left drift
 - B right drift
 - C a wind from the west
 - D zero drift
- 2 What is the wavelength of an NDB transmitting on 375 kHz?
- A 8 m
 - B 80 m
 - C 800 m
 - D 8000 m
- 3 An aircraft is on radial 120 with a magnetic heading of 300°, the track selector (OBS) reads: 330. The indications on the Course Deviation Indicator (CDI) are 'fly':
- A left with 'FROM' showing
 - B right with 'FROM' showing
 - C right with 'TO' showing
 - D left with 'TO' showing
- 4 The frequency range of a VOR receiver is:
- A 108 to 117.95 MHz
 - B 108 to 111.95 MHz
 - C 118 to 135.95 MHz
 - D 108 to 135.95 MHz
- 5 An airway 10 NM wide is to be defined by two VORs each having a resultant bearing accuracy of plus or minus 5.5°. In order to ensure accurate track guidance within the airway limits the maximum distance apart for the transmitter is approximately:
- A 50 NM
 - B 105 NM
 - C 210 NM
 - D 165 NM
- 6 Distance Measuring Equipment (DME) operates in the:
- A UHF band and uses two frequencies
 - B VHF band and uses the principle of phase comparison
 - C UHF band and uses one frequency
 - D SHF band and uses frequency modulation techniques
- 7 The aircraft DME receiver is able to accept replies to its own transmissions and reject replies to other aircraft interrogations because:
- A pulse pairs are amplitude modulated with the aircraft registration
 - B pulse pairs are discreet to a particular aircraft
 - C transmission frequencies are 63 MHz different for each aircraft
 - D aircraft interrogation signals and transponder responses are 63 MHz removed from each other

NAVIGATION (2)
RADIO NAVIGATION



- 8 The rate of descent required to maintain a 3.25° glide slope at a groundspeed of 140 kt is approximately:
- A 760 FT/MIN
 - B 850 FT/MIN
 - C 670 FT/MIN
 - D 700 FT/MIN
- 9 Which of the following is an ILS localiser frequency?
- A 108.25 MHz
 - B 109.15 MHz
 - C 112.10 MHz
 - D 110.20 MHz
- 10 A Primary radar operates on the principle of:
- A transponder interrogation
 - B pulse technique
 - C continuous wave transmission
 - D phase comparison
- 11 In which frequency band do most airborne weather radars operate?
- A SHF
 - B UHF
 - C EHF
 - D VHF
- 12 The maximum range obtainable from an ATC Long Range Surveillance Radar is approximately:
- A 200-300 NM
 - B 100-200 NM
 - C 50-100 NM
 - D 300-400 NM
- 13 The ISO-ECHO facility of an airborne weather radar is provided in order to:
- A inhibit unwanted ground returns
 - B extend the mapping range
 - C detect areas of possible severe turbulence in cloud
 - D give an indication of cloud tops

NAVIGATION (2)
RADIO NAVIGATION



- 14** In Airborne Weather Radar (AWR), the main factors which determine whether a cloud will be detected are:
- A** range from cloud;
wavelength/frequency used
 - B** size of the water drops;
wavelength/frequency used
 - C** rotational speed of radar scanner;
range from cloud
 - D** size of the water drops;
diameter of radar scanner
- 15** The ATC transponder system, excluding Mode S, contains:
- A** two modes, each of 4096 codes
 - B** four modes, each 1024 codes
 - C** four modes, each 4096 codes
 - D** two modes, each 1024 codes
- 16** Under JAR-25 colour code rules specified display features colour set 1 for Electronic Flight Instrument Systems (EFIS), selected data and values are coloured:
- A** yellow
 - B** magenta
 - C** white
 - D** green
- 17** Under which of the following circumstances does a VOR/DME Area Navigation system switch to Dead Reckoning mode?
- A** The system is receiving information from one VOR and one DME
 - B** The system is receiving information from only one VOR
 - C** The system is not receiving TAS information from the Air Data Computer.
 - D** The system is receiving information from one VOR and two DMEs
- 18** Radar returns, on a B737-400, can be displayed on all Electronic Horizontal Situation Indicator (EHSI) screen modes of an Electronic Flight Instrument System (EFIS) WITH THE EXCEPTION OF:
- A** EXP VOR/ ILS, PLAN and MAP
 - B** FULL NAV, FULL VOR/ILS and PLAN
 - C** FULL VOR/ILS, EXP VOR/ILS and PLAN
 - D** FULL NAV, PLAN and MAP
- 19** The Flight Management System (FMS) is organised in such a way that the pilot can:
- A** read and write at any time in the database
 - B** modify the database every 14 days
 - C** modify the data in the database between two updates
 - D** insert navigation data between two database updates

NAVIGATION (2)
RADIO NAVIGATION



- 20** Which of the following gives the best information about the progress of a flight between 2 en-route waypoints from a RNAV equipment?
- A** ETO
 - B** ETD
 - C** ATA
 - D** Elapsed time on route.
- 21** In the Flight Management Computer (FMC) of the Flight Management System (FMS), data relating to cruising speeds is stored in the:
- A** navigation database
 - B** auto flight computers
 - C** performance database
 - D** air data computer
- 22** (For this question use annex A)
What is the value of the track from TBX to YTB?
- A** 140°(M)
 - B** 280°(T)
 - C** 097°(T)
 - D** 170°(M)
- 23** In relation to Area Navigation Systems (RNAV), which of the following is an Air Data input?
- A** Doppler drift
 - B** VOR/DME radial/distance
 - C** Inertial Navigation System (INS) position
 - D** True airspeed
- 24** Which one of the following lists information given by a basic VOR/DME-based Area Navigation System?
- A** Wind velocity
 - B** True airspeed; drift angle
 - C** Crosstrack distance; alongtrack distance; angular course deviation
 - D** Aircraft position in latitude and longitude
- 25** Which of the following correctly gives the principle of operation of the Loran C navigation system?
- A** Phase comparison between synchronised transmissions
 - B** Differential range by phase comparison
 - C** Frequency shift between synchronised transmissions
 - D** Differential range by pulse technique

NAVIGATION (2)
RADIO NAVIGATION

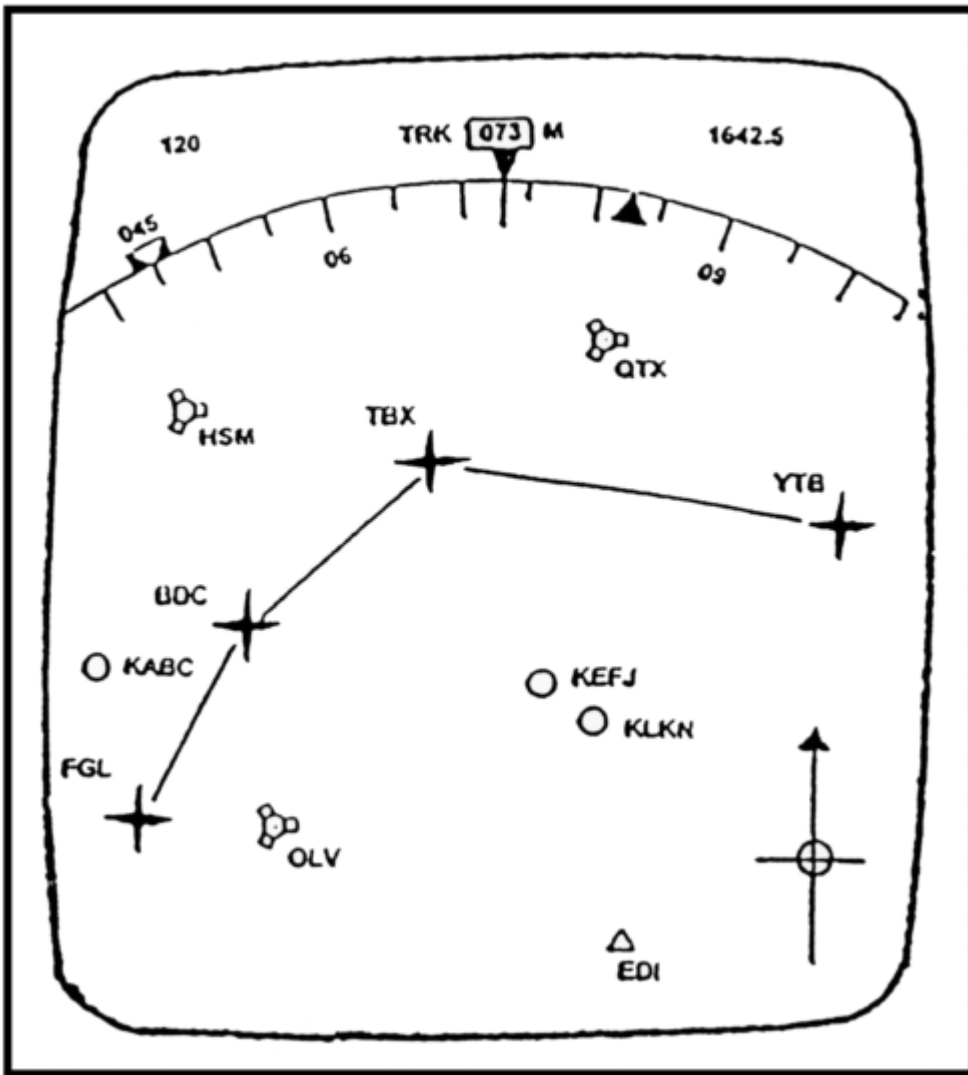


- 26** What is the inclination to the equatorial plane of the satellite's orbit in the NAVSTAR GPS constellation?
- A** 55°
 - B** 45°
 - C** 35°
 - D** 65°
- 27** What is the minimum number of NAVSTAR/GPS satellites required to produce an accurate independent 3-D position fix?
- A** 3
 - B** 24
 - C** 5
 - D** 4
- 28** The influence of the ionosphere on the accuracy of the satellite navigation system NAVSTAR/GPS is:
- A** minimised by computing the average of all signals
 - B** minimised by the receiver using a model of the atmosphere and comparing signals transmitted by the satellites
 - C** negligible
 - D** only significant if the satellites are located at a small elevation angle above the horizon
- 29** Which of the following statements about the accuracy that can be obtained with the differential technique (D-GPS) of the satellite navigation system NAVSTAR/GPS is correct?
- A** The nearer a receiver is situated to a D-GPS ground station, the more accurate the position fix
 - B** The increase in accuracy of position fixes is independent of the receiver position in relation to a D-GPS ground station
 - C** A D-GPS receiver can detect and correct for SA providing a more accurate position fix
 - D** Only D-GPS allows position fixes accurate enough for 'Non Precision Approaches'

NAVIGATION (2)
RADIO NAVIGATION



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QUESTIONS