

## **Titel: NAVIGATION (2)**

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*Abstrakt:* Themenbezogene Sammlung von ATPL-Prüfungsfragen, ohne Gewähr auf Aktualität bzw. Vollständigkeit

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## NAVIGATION (2) RADIO NAVIGATION

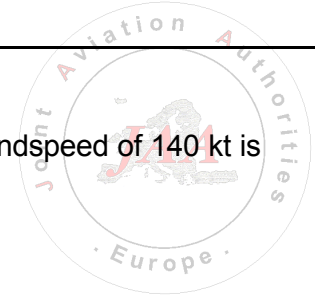
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- 1 An aircraft is "homing" to a radio beacon whilst maintaining a relative bearing of zero. If the magnetic heading decreases, the aircraft is experiencing:
- A left drift
  - B right drift
  - C a wind from the west
  - D zero drift
- 2 What is the 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  $300^\circ$ , 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  $5.5^\circ$ . 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
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- 8 The rate of descent required to maintain a  $3.25^\circ$  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

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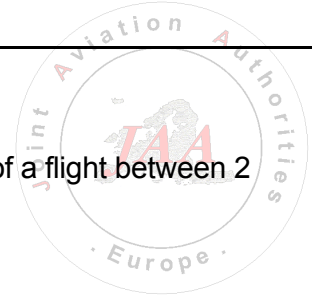
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- 14 In Airborne Weather Radar (AWR), the main factors which determine whether a cloud will be detected are:
- A range from cloud;  
wavelength/frequency used
  - B size of the water drops;  
wavelength/frequency used
  - C rotational speed of radar 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

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- 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

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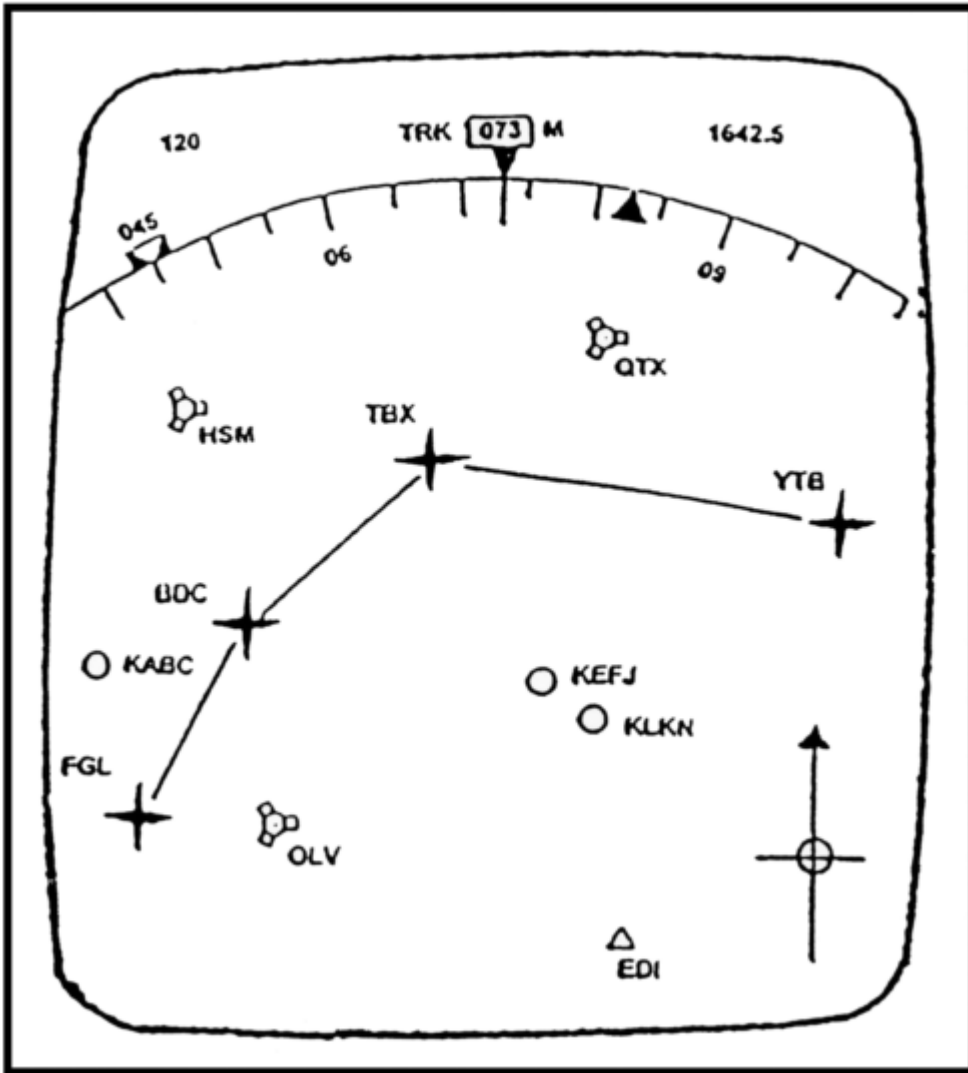


- 26** What is the inclination to the equatorial plane of the satellite's orbit in the NAVSTAR GPS constellation?
- A** 55°
  - B** 45°
  - C** 35°
  - D** 65°
- 27** What is the minimum number of NAVSTAR/GPS satellites required to produce an accurate independent 3-D position fix?
- A** 3
  - B** 24
  - 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'

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QUESTIONS

ANSWERS