

Infrastructures del Transport Aeri

Midterm exam - Spring semester 2014

Short questions: answer them with one word or one sentence in the space provided.

Correct answer: +1 point – Incorrect answer: -1 point – Blank answer: 0 points.

What is the **minimum flight altitude** for the segment of the airway that goes from Barcelona VOR to SARGO fix (at the North-East border of Palma TMA)? Use the IFR chart provided in annex to this exam.

An aircraft operator is flying from Girona airport to Madrid. The initial part of its IFR route (as filed in the ATS flight plan) has been written as: *CLE – MAMUK – H110 – REBUL – G23 ... Is this ATS flight plan correct?* Answer yes or no. If it is not correct, what would be the correct version? Use the IFR chart provided in annex to this exam.

Does the en-route chart given in annex to this exam correspond to the **Upper airspace or the Lower airspace?**

KABRE1F arrival procedure (see chart annexed to this exam) for runway 19R at Menorca is composed by two IFR legs. How is defined the **fix** delimiting the end of the first leg and the beginning of the second leg?

Give **three (3)** examples of information that could be given by a Flight Information Service to an aircraft crew.

What is the IFR clearance delivery?

Why in Europe or in the U.S. some flights are exempted from ATFM measures?

Why a digital database is needed in all RNAV systems?

Give **one (1)** example of **safety indicator**

Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the minimum obstacle clearance **altitude** for a category B aircraft landing into the opposite runway (**runway 02**) is:

Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the minimum obstacle clearance **height** for a category C aircraft landing into **runway 20** with an ILS CAT-II is:

You are controlling an en-route sector of Barcelona UIR just above Barcelona TMA. BAW007 is a B737 coming from Manchester with destination Barcelona airport. It is now at FL384 and descending. Its planned entry level into your sector is FL320, its exit flight level is at FL220. BAW007 is still with Bordeaux control and it is expected to be **transferred** to your sector **in 5 minutes** approximately.

1- Enumerate **two (2)** different actions, and **with chronological order**, that the **planner controller** will do regarding this traffic within the next 15 minutes approximately.

2- Enumerate **two (2)** different actions, and **with chronological order**, that the **executer controller** will do regarding this traffic within the next 15 minutes approximately.

Regarding the GPS, **how many satellites in view are needed**, at least, to estimate the position of the receiver?

Which system provides more navigation accuracy: **SBAS or GBAS?**

Which system provides a wider coverage area: **SBAS or GBAS?**

INFRAESTRUCTURES DEL TRANSPORT AERI (ITA)

Mid Term Exam - Spring semester 2014

Correct answer: +1 point – Incorrect answer: -1/3 points – Blank answer: 0 points

For each question **only one answer** is correct

Permutacio A

1. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the initial approach segment is for BANOL IAF is:
 - (a) an ILS course.
 - (b) a racetrack procedure.
 - (c) a reversal procedure.
 - (d) a VOR radial.
2. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the radionavigation aid labeled as *IGN* is a:
 - (a) Localizer.
 - (b) VOR/DME.
 - (c) Locator.
 - (d) DME.
3. Mark the **correct** statement:
 - (a) Flight information Services are provided when Air Traffic Control is provided.
 - (b) Air Traffic Control is provided when Alert Services are provided.
 - (c) Flight Information Services are provided when Alert Services are provided.
 - (d) All the answers are correct.
4. An aircraft has just landed at a major airport and has vacated the runway. In order to reach its gate at the terminal, an active runway needs to be crossed. Which control is responsible to deliver the needed clearance to cross the runway?
 - (a) The ground control.
 - (b) The tower control.
 - (c) The delivery control.
 - (d) The approach control.
5. The ground-based augmentation system (GBAS) working principle is based on:
 - (a) the similarity of the errors for receivers located "not far" from each other.
 - (b) an additional satellite that broadcasts the GPS errors.
 - (c) None of the other answers are correct.
 - (d) the receiver autonomous integrity monitoring (RAIM) principle.
6. Which is the main problem of current version of GPS if used for civil aviation?
 - (a) Its lack of integrity.
7. Its lack of availability.
8. Not enough vertical accuracy for en-route procedures.
9. Not enough accuracy for terminal procedures.
10. Air Traffic Control (ATC) services shall be provided to:
 - (a) All IFR flights.
 - (b) All IFR flights in airspace classes A, B, C, D and E.
 - (c) All flights that have filed a flight plan.
 - (d) Any aircraft known by the ATC.
11. Imagine an aircraft executing the KABRE1F arrival procedure (see chart annexed to this exam) for runway 19R at Menorca when the ATC instructs the pilot to hold at the IAF. In this case, the aircraft will enter the hold with...
 - (a) a direct entry procedure.
 - (b) a racetrack entry procedure.
 - (c) a parallel entry procedure.
 - (d) an offset entry procedure.
12. Which of the following statements is correct?
 - (a) The answers marked with (*) are correct.
 - (b) A VOR approach procedure is always a NPA procedure (*).
 - (c) None of the other answers are correct.
 - (d) A NPA approach procedure is always a VOR procedure (*).
13. Regarding the STARs chart for Girona RWY20, annexed to this exam, the radionavigation aid labelled as *GRN* is a:
 - (a) VOR/DME.
 - (b) NDB.
 - (c) Localizer.
 - (d) DME.
14. European airports are...
 - (a) are not regulated at all.
 - (b) are only regulated if the demand exceeds the capacity.
 - (c) typically regulated by *schedule* (or IATA) slots that suppose a rather worst case IMC scenario.
 - (d) are only regulated in certain ECAC countries.
15. In a Localizer only approach procedure, the decision to land or to execute a missed approach must be taken, at the latest, when...
 - (a) reaching the MAPt.
 - (b) reaching the OCA.

- (c) reaching the DA.
 (d) reaching the MDA.
13. An aircraft operator (RNAV equipped) is defining the best route to go from Girona airport (LEGE) to Menorca airport (LEMH). According to the IFR navigation charts given in annex to this exam, which of the following IFR routes, as it would be written into an ATS flight plan, is correct?
- (a) GIR – BGR – A67 – SARGO – MHN
 (b) None of the other answers is correct.
 (c) BGR – A67 – SARGO
 (d) GIR – N727 – SARGO – A67 – MHN
14. Air Navigation Services (ANS) are composed by:
- (a) Alert services, flight information services and air traffic control.
 (b) ASM, ATFM and ATS.
 (c) AIP, NOTAM and CIRC.
 (d) CNS, ATM, Search and Rescue, AIS, and Meteorology services.
15. Regarding the SID MAMUK1H for RWY20 at Girona airport, which of the following statements is correct?
- (a) All aircraft shall be at FL75 when overflying MAMUK.
 (b) All aircraft shall be at FL75 or above when overflying MAMUK.
 (c) All aircraft shall be at FL75 or below when overflying MAMUK.
 (d) All aircraft shall be at strictly below FL75 when overflying MAMUK.
16. Which is the radio-telephony callsign of a flight labelled as *BAW142* in an ATC radar screen?
- (a) British Airways One Four Two
 (b) Speedbird One Four Two
 (c) Bravo Alpha Whiskey One Four Two
 (d) Brussels One Four Two
17. Who is *responsible* to check that the positioning geometry is good enough to fly an RNAV GNSS procedure?
- (a) the procedure designer.
 (b) the GNSS receiver.
 (c) the pilot in command.
 (d) the air traffic controller.
18. In general, in which of the following ATC dependencies radar vectoring (heading instructions) is mostly provided?
- (a) In ground control (GND).
 (b) In aerodrome control Tower (TWR).
 (c) In area control (en-route control).
 (d) In approach control (APP).
19. The OCA...
- (a) is the minimum visibility required for an instrumental approach procedure.
- (b) is also known as the minima-minima.
 (c) is a synonym of minimum descent altitude.
 (d) is the minimum altitude in the final approach segment regarding obstacle clearance.
20. Which of the following statements is correct?
- (a) NPA and PA approaches provide vertical and lateral guidance, while APV approaches provide only lateral guidance.
 (b) APV approaches provide vertical and lateral guidance, PA approaches provide only lateral guidance and NPA are non-guided (visual) approaches.
 (c) PA approaches provide vertical and lateral guidance, NPA approaches provide only lateral guidance and APV are non-guided (visual) approaches.
 (d) APV and PA approaches provide vertical and lateral guidance, while NPA approaches provide only lateral guidance.
21. Standard airfield traffic patterns are...
- (a) with turns to the right and at 1000 ft above the aerodrome elevation.
 (b) with turns to the left and at 2000 ft above the aerodrome elevation.
 (c) with turns to the left and at 1000 ft above the aerodrome elevation.
 (d) with turns to the right and at 2000 ft above the aerodrome elevation.
22. The reduction of the VHF channel spacing is crucial in the European civil aviation...
- (a) to enhance the aircraft navigation accuracy.
 (b) to minimise the errors in radio telephone (RTF) communications.
 (c) because more frequency channels could be needed to increase the capacity of the overall system.
 (d) to create a new set of pilot-controller communication messages.
23. An APV is a:
- (a) a RNAV non precision approach.
 (b) a visual approach.
 (c) a circling to approach.
 (d) an approach with vertical guidance but with navigation performances worse than precision approaches.
24. An airspace sector has been regulated and its maximum capacity is set to 6 aircraft per hour. The table below depicts the Estimated Time Over (ETO) the concerned sector for a given set of aircraft. What is the ATFM delay that would be assigned to EZY078 according to the computed assisted slot allocation (CASA) algorithm?
- | Flight | ETO | Flight | ETO |
|--------|-------|--------|-------|
| BAW123 | 10:01 | DAL077 | 10:24 |
| IBE222 | 10:06 | BAW444 | 10:40 |
| RYR069 | 10:07 | AFR022 | 11:02 |
| EZY078 | 10:11 | AZA333 | 11:05 |
- (a) 1 minute.
 (b) 4 minutes.

- (c) 19 minutes.
 (d) No delay.
25. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the initial approach segment is for GIR IAF is
 (a) a reversal procedure.
 (b) a racetrack procedure.
 (c) a dead-reckoning segment that depends on the aircraft speed.
 (d) an ILS course.
26. Which of the following radionavigation aids **cannot** be used as the main aid providing guidance in the final approach segment of a non-precision approach procedure?
 (a) A VOR/DME.
 (b) All three radionavigation aids are valid.
 (c) A NDB.
 (d) A Locator.
27. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the intermediate segment for the procedure starting at DONAV is:
 (a) a dead-reckoning leg.
 (b) a NDB course.
 (c) a VOR radial.
 (d) an arc DME.
28. When procedural control is given to an approach procedure, then:
 (a) the air traffic controller can clear only one aircraft per approach.
 (b) the pilots must not consider any ACAS advisory.
 (c) the pilots ensure separation by their own means (visual, ASAS, etc.).
 (d) the air traffic controller can give vectors to the aircraft to ensure separation.
29. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the radionavigation aid labelled as *MHN* is a:
 (a) VOR/DME.
 (b) DME.
 (c) ILS/DME.
 (d) NDB.
30. Which of the following ATFM initiatives is the most widely used in Europe and in the U.S.?
 (a) Miles in trail.
 (b) Call for release.
 (c) Level capping.
 (d) Ground holding.
31. Using GPS, ownship position can be determined...
 (a) None of the other answers are correct.
- (b) by measuring the relative velocity to the satellites, whose velocity vectors are known.
 (c) by measuring the distance to the satellites, whose positions are known.
 (d) by means of the Doppler effect.
32. Who decides if a IFR procedure is RNAV or conventional?
 (a) The aircraft manufacturer.
 (b) The aircraft operator.
 (c) The procedure designer.
 (d) The air traffic controller.
33. Which is the minimum vertical accuracy required by a GNSS system if we want to execute non-precision approaches with it?
 (a) 20 meters.
 (b) 8 meters.
 (c) 6 to 4 meters.
 (d) there are no vertical requirements in that case.
34. Which of the following legs is not properly an RNAV leg?
 (a) a DME arc.
 (b) a dead-reckoning segment.
 (c) a VOR radial.
 (d) none of them are RNAV.
35. In civil aviation, which of the following transponder modes corresponds to the simplest system?
 (a) Mode C.
 (b) Mode A.
 (c) Mode S.
 (d) Mode B.
36. What does *broadcast* mean, in the context of ADS-B?
 (a) that all ADS-B messages are automatically stored in a database.
 (b) that the ADS-B messages are automatically computed without the active action of the pilot.
 (c) that the ADS-B messages are continuously transmitted.
 (d) that the ADS-B messages are continuously requested by ground ATC facilities.
37. North Atlantic oceanic control typically require the aircraft crew to:
 (a) Reporting periodically their position every 10° of longitude.
 (b) Transmit their position only when requested by the ATC.
 (c) Reporting periodically their position every 20° of longitude.
 (d) Reporting periodically their position every 2h.
38. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the final approach segment is:
 (a) a VOR radial.
 (b) an ILS course.
 (c) a racetrack procedure.

- (d) a reversal procedure.
39. Which is NOT correct, according to the ICAO radio-telephony alphabet?
- S*: Sierra
 - I*: India
 - L*: Lima
 - R*: Roger
40. Which of the following institutions is NOT an aircraft operator?
- Institut Cartogràfic de Catalunya.
 - Vueling.
 - Boeing.
 - All of them are aircraft operators.
41. Which of the following CFMU systems implements the Computer Assisted Slot Allocation (CASA) algorithm?
- The PREDICT
 - The RPL
 - The ETFMS
 - The IFPS
42. Which of the following controlled airspace zones is sized to accommodate, approximately, all the aircraft flying standard instrumental arrivals or departures?
- The CTR.
 - The ATZ.
 - The TMA.
 - The CTA.
43. Which of the following methods shall be used to define a VFR reporting point?
- Some timing after overflying a radionavigation facility.
 - An significant landmark.
 - The intersection of a VOR radial and a NDB course.
 - Overflying a radionavigation facility.
44. In which case you could find an approach procedure with no decision height?
- In an E category approach.
 - In an ILS CAT-III approach.
 - In a Heavy category approach.
 - In a circling to approach.
45. Which type of fix is OLOTI, which appears in the SID chart for RWY20 in Girona airport?
- a VOR.
 - none of the other answers is correct.
 - a RNAV waypoint.
 - an intersection.
46. Regarding the primary surveillance radar (PSR), which of the following statements is correct?
- All of them are correct.
 - PSR is independent of the aircraft equipment.
 - PSR provides azimuth and range.
 - PSR uses "brute force technology": high power and low performance.
47. The *free route* concept allows...
- the pilot to freely plan a route joining two points without the need for overflying specific ground facilities and submit the route in the flight plan.
 - the procedure designer to design guided segments joining two points without the need for overflying specific ground facilities.
 - the pilot to freely chose a route joining two points without the need for overflying specific ground facilities at tactical level assuring self-separation with other aircraft.
 - all the answers are correct.
48. Imagine that AENA wants to enhance the arrival procedures at Girona airport and publish RNAV DME/DME STARs. Regarding the STARs chart for runway 20 at Girona airport given in annex to this exam, and imagining that BANOL fix is converted to a RNAV waypoint, which of the following statements is correct?
- If GIR DME is out of service the procedure to BANOL can not be flown by a DME/DME RNAV system.
 - If CLE and GIR DMEs are out of service the procedure to BANOL can not be flown by a DME/DME RNAV system.
 - None of them are correct.
 - If SLL and BGR DMEs are out of service the procedure to BANOL can not be flown by a DME/DME RNAV system.
49. Which of the following transponder codes indicates a lost of radio communications?
- 7700
 - 7500
 - 1215
 - 7600
50. If an aircraft loses its CFMU slot while on ground the controller should:
- Request the airline to fill a new flight plan in order to obtain an new slot.
 - Clear the aircraft to take-off as soon as possible.
 - Send a message to the CFMU informing about the delay and clear the aircraft to take-off as soon as possible.
 - The controller does not consider the slots allocated to departing aircraft.
51. Regarding the Satellite Based Augmentation System (SBAS)...
- Such systems are commonly composed of multiple ground stations, located at accurately-surveyed points.
 - All the answers are correct.

- (c) The ground stations take measurements of one or more GNSS satellite signals and other environmental factors which may impact the signal received by the users.
- (d) It is a system that supports a wide-area or regional augmentation by using several additional satellite broadcast messages.
52. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam:
- (a) It is a circling and a precision approach.
 - (b) It is a circling and a non precision approach.
 - (c) It is a straight-in and a precision approach.
 - (d) It is a straight-in and a non precision approach.
53. Regarding the figure 1(b), AEA979D is **not yet in our sector** (the label of the aircraft is of colour blue). In this case, what does FL320 represent?
- (a) The exit flight level of our sector.
 - (b) The desired cruise altitude of the aircraft.
 - (c) The last cleared flight level.
 - (d) The planned entry flight level to our sector.
54. A VFR flight is flying inside an airspace of class C. The air traffic controller is responsible to separate it from:
- (a) other VFR flights.
 - (b) other VFR and IFR flights.
 - (c) other IFR flights.
 - (d) the controller has no responsibility with VFR flights in airspace class C.
55. Which of the following statements is *not correct*?
- (a) when reaching the MAPt, if the aircraft crew cannot see the landing runway they must intermediately initiate the missed approach procedure.
 - (b) for the same airport, the MDA for a circling to approach procedure would be typically higher than the MDA for an straight-in approach procedure.
 - (c) when reaching the DA, if the aircraft crew cannot see the landing runway they must intermediately initiate the missed approach procedure.
 - (d) when reaching the MDA, if the aircraft crew cannot see the landing runway they must intermediately initiate the missed approach procedure.
56. When executing an approach procedure, in which case the pilot can proceed below the published MDA?
- (a) only in the case of executing a precision approach procedure.
 - (b) only when the FAF has been overflown.
 - (c) only when the pilot has visual contact with the runway and decides to land.
 - (d) only when the MAPt has been overflown.
57. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam...
- (a) it is a non precision approach.
- (b) it is a CAT-I approach.
- (c) it is a circling to approach.
- (d) it is an APV approach.
58. An aircraft operator (RNAV equipped) is defining the best route to go from Menorca airport (LEMH) to Girona airport (LEGE). According to the IFR navigation charts given in annex to this exam, which of the following IFR routes, as it would be written into an ATS flight plan, is correct?
- (a) SARGO – N727 – GIR
 - (b) SARGO – N727 – SALON – A27 – BGR
 - (c) None of the other answers is correct.
 - (d) MHN – A67 – BGR – H110 – GIR
59. Which of the following initiatives is **NOT** an ATFM initiative?
- (a) Call for release.
 - (b) Miles in trail.
 - (c) Level capping.
 - (d) All are ATFM initiatives.
60. Pre-tactical ATFM should:
- (a) Manage current flights with existing ATC capacity.
 - (b) Define the national airspace policy and predetermined airspace structures.
 - (c) Balance flights next day with available ATC Capacity.
 - (d) Match long-term demand and needed ATC capacity.
61. In the frame of ATS, who is responsible for executing transfers of aircraft between two ATC sectors?
- (a) The planner controller.
 - (b) None of the other answers is correct.
 - (c) The supervisor controller.
 - (d) The tactical controller.
62. Figure 1(c) shows:
- (a) A TCAS TA alert.
 - (b) A MTCD alert.
 - (c) A TCAS RA alert.
 - (d) A STCA alert.
63. Regarding the legs that compose the GEANT1H SID for RWY20 at Girona airport, which of the following options is correct?
- (a) The SID is formed by the succession of three consecutive VOR radials.
 - (b) The SID is formed by one VOR radial, followed by a dead-reckoning leg, followed by another VOR radial.
 - (c) The SID is formed by a dead-reckoning leg, followed by a DME arc, followed by two VOR radials.
 - (d) The SID is formed by a VOR radial, followed by a DME arc, followed by two VOR radials.
64. Which is the principal method of navigation for VFR flights?

- (a) radar vectoring.
 (b) RNAV.
 (c) VOR radials and NDB courses.
 (d) dead reckoning.
65. Which of the following statements is NOT a new concept/system regarding the **communications** in the future CNS systems for ATM?
 (a) Aircraft Communications Addressing and Reporting System (ACARS).
 (b) Controller-Pilot DataLink Communications (CPDLC).
 (c) Transponder Mode-S.
 (d) Reduced VHF frequency spacing (8.33 kHz).
66. In which situation an air traffic controller shall give traffic information (collision hazards with other aircraft) to a VFR flight?
 (a) When the aircraft is inside a TMA.
 (b) All the answers are correct.
 (c) When the aircraft is inside a CTR.
 (d) When the aircraft is inside any airspace of class D.
67. An IFR aircraft is flying in RVSM airspace with heading 110° , following the *odd-even* rule to assign a flight level, a possible flight level for the flight could be:
 (a) FL330
 (b) FL320
 (c) FL335
 (d) FL325
68. Regarding the Instrumental Approach Chart (IAC) **Girona ILS Z RWY20**, annexed to this exam, the aircraft operator will publish for their crew a...
 (a) obstacle clearance altitude.
 (b) decision altitude.
 (c) ILS minimum altitude.
 (d) minimum descent altitude.
69. In order to solve the conflict shown in Figure 1(c) in the most efficient way, the ATC could instruct the AFR161 to change altitude to:
 (a) FL375
 (b) FL270
 (c) FL380
 (d) FL371
70. If an aircraft declares an emergency, communicating that the fuel on board is insufficient for a safe landing, which of the following phases shall be activated?
 (a) Uncertainty phase.
 (b) Distress phase.
 (c) Alert phase.
 (d) Awareness phase.
71. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the aircraft operator will publish for their crew...
- (a) a minimum descent altitude.
 (b) a decision altitude.
 (c) an obstacle clearance altitude.
 (d) a minimum decision altitude.
72. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the initial approach segment for the procedure starting at MHN IAF is...
 (a) a VOR radial.
 (b) a racetrack procedure.
 (c) a holding procedure.
 (d) a dead-reckoning radial.
73. How the letter *B* is spelled, according to the ICAO radio-telephony alphabet?
 (a) Broquil.
 (b) Biktor.
 (c) Beta.
 (d) Bravo.
74. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the MAPt is defined as:
 (a) a VOR radial.
 (b) a radionavigation facility.
 (c) the intersection of two VOR radials.
 (d) a DME distance.
75. In a NDB approach procedure, the decision to land or to execute a missed approach must be taken, at the latest, when...
 (a) reaching the OCA.
 (b) reaching the DA.
 (c) reaching the MAPt.
 (d) reaching the MDA.
76. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, imagine an aircraft arriving at MHN IAF with heading 230° . Imagine the ATC instructs the aircraft to execute the holding pattern. In this case, the aircraft will enter the hold with...
 (a) a direct entry procedure.
 (b) a parallel entry procedure.
 (c) a racetrack entry procedure.
 (d) an offset entry procedure.
77. What are “Hand off” or “Hand over” procedures?
 (a) Procedures for transferring aircraft responsibility between adjacent ATC sectors.
 (b) Procedures established for transferring repetitive flight plans between aircraft operators and the CFMU.
 (c) None of the other answers is correct.
 (d) Procedures for transferring new proposals of air routes from ASM to ATC.
78. Regarding the figure 1(a), the Delta aircraft is:

- (a) at FL190 and descending, cleared to FL160 and with a planned exit level at FL250.
 (b) at FL250 and descending, cleared to FL190 and with a planned exit level at FL160.
 (c) at FL190 and descending, cleared to FL250 and with a planned exit level at FL160.
 (d) at FL250 and descending, cleared to FL160 and with a planned exit level at FL190.
79. According to the following definitions: EOBT (Estimated Off-Block Time), ETOT (Estimated take-off time), ETO (Estimated Time Over), COBT (Calculated Off-Block Time), CTOT (Calculated Take-Off Time), CTO (Calculated Time Over); which of the following time relationships is correct for an aircraft that has been affected by a ground holding ATFM regulation:
- $CTO = EOBT + \text{Ground Delay} + \text{Taxi Time}$
 - $CTO = ETO$
 - $CTO = ETOT + \text{Trip Time}$
 - $CTO = COBT + \text{Taxi Time} + \text{Trip Time}$
80. Regarding the Instrumental Approach Chart (IAC) **Menorca VOR**, annexed to this exam, the missed approach segment is mainly composed by:
- a VOR radial followed by a DME arc.
 - two dead-reckoning legs.
 - two VOR radials.
 - a VOR radial followed by a dead-reckoning legs.
81. Which transponder mode can transmit the automatic dependent surveillance - broadcast (ADS-B) messages?
- Mode S.
 - Mode A.
 - Mode C.
 - Mode B.
82. Regarding the airborne separation assurance systems (ASAS) and airborne collision avoidance systems (ACAS), which of the following statements is correct?
- ACAS could be an enabler of the Free Flight concept.
 - ASAS serves as a last-resort safety net irrespective of any separation standards.
 - Traffic collision avoidance system (TCAS) is a commercially available ACAS system.
 - All the answers are correct.
83. Which physical transmission layer is used by the ACARS?
- All answers are correct.
 - High Frequency (HF) subnetwork.
 - Very high frequency (VHF) subnetwork.
 - Satellite communication.
84. A racetrack procedure...
- is a type of holding pattern.
 - None of the other answers are correct.
 - is when an aircraft uses an active runway to taxi in the opposite direction from which it will take off or has landed.
 - could be, for instance, a 45/180 procedure turn.

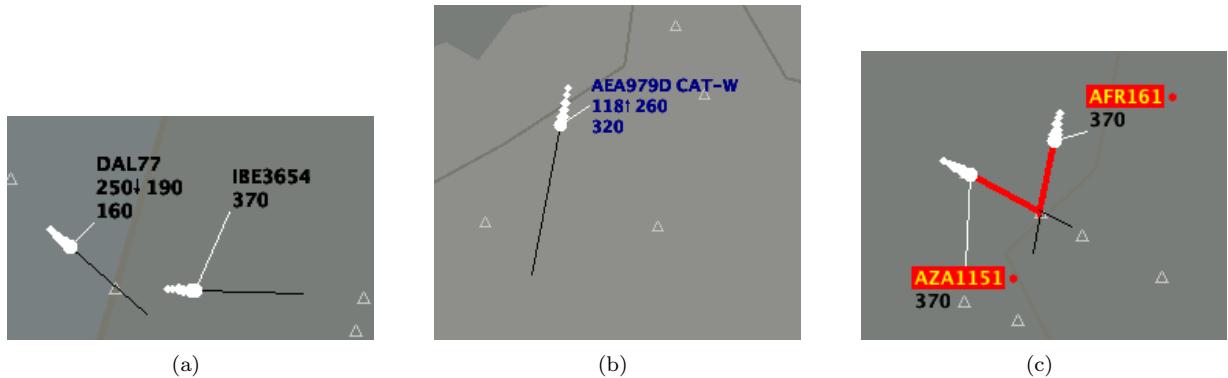
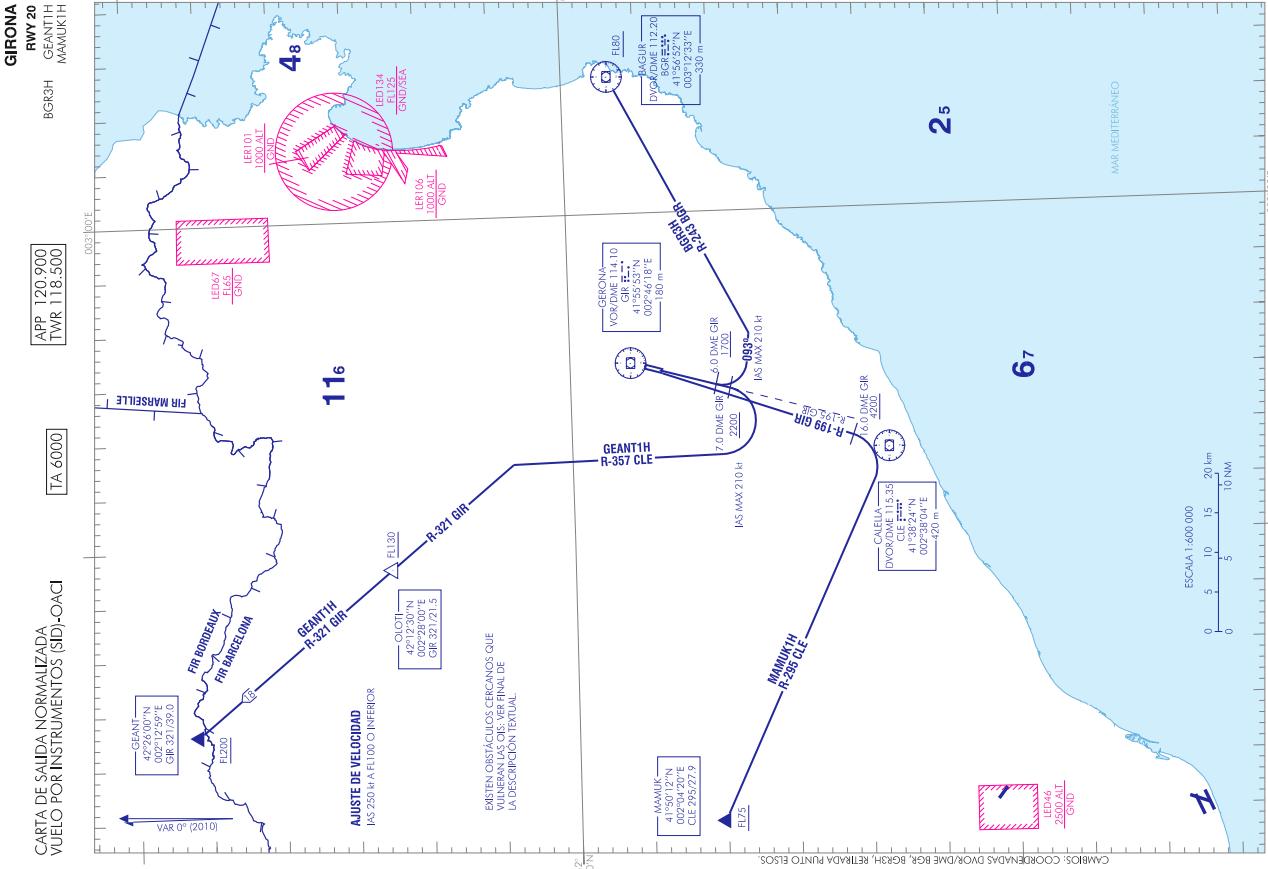
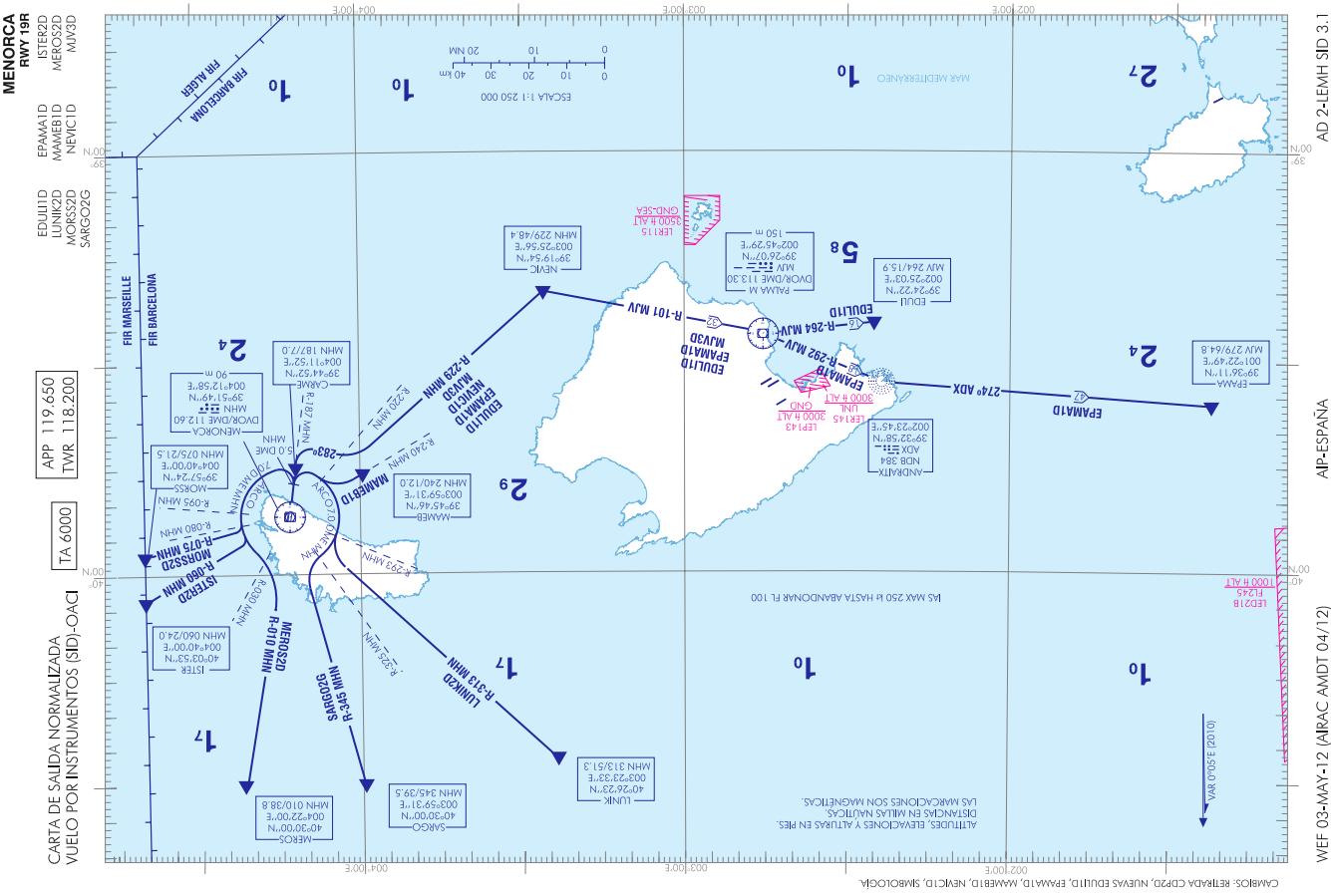
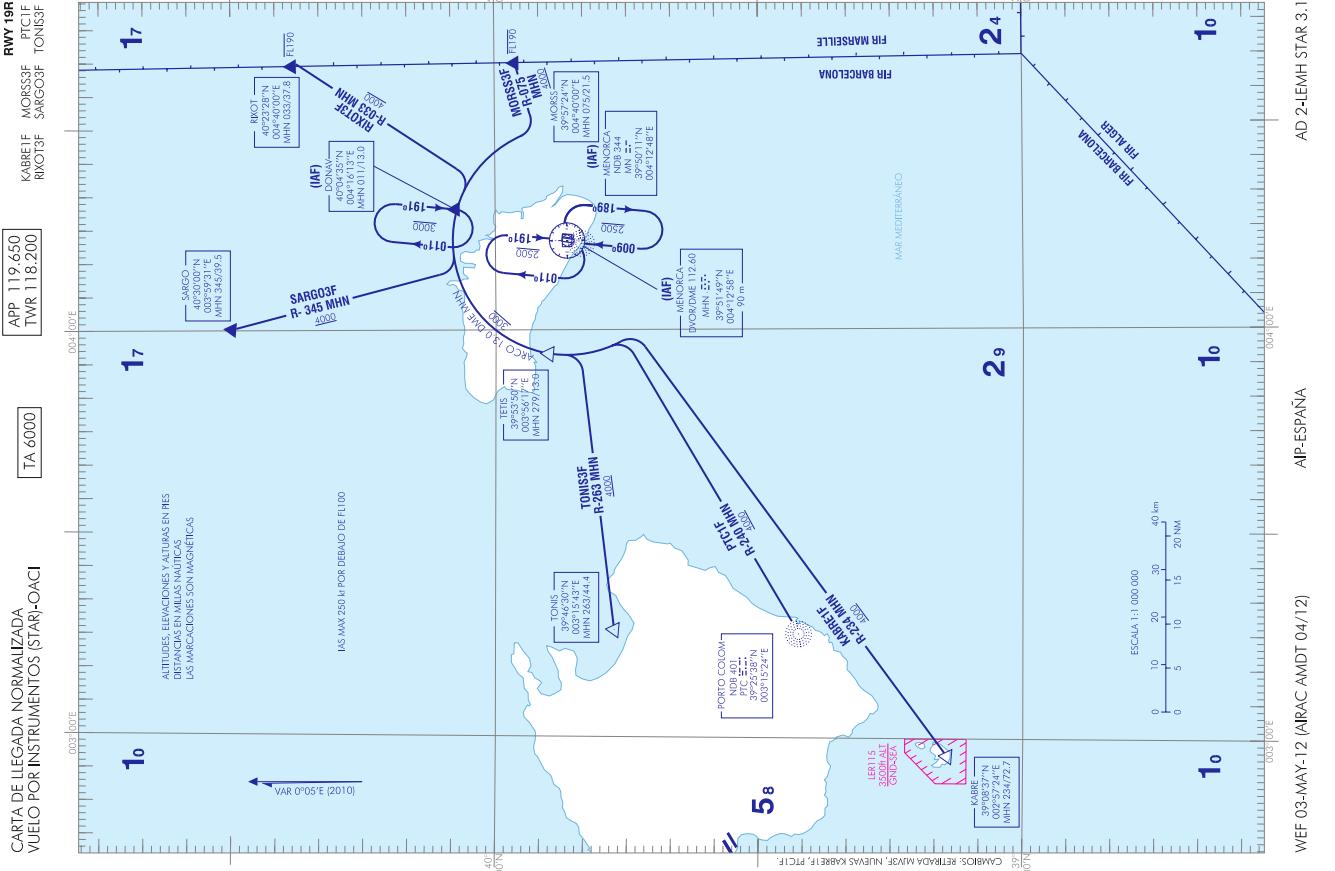
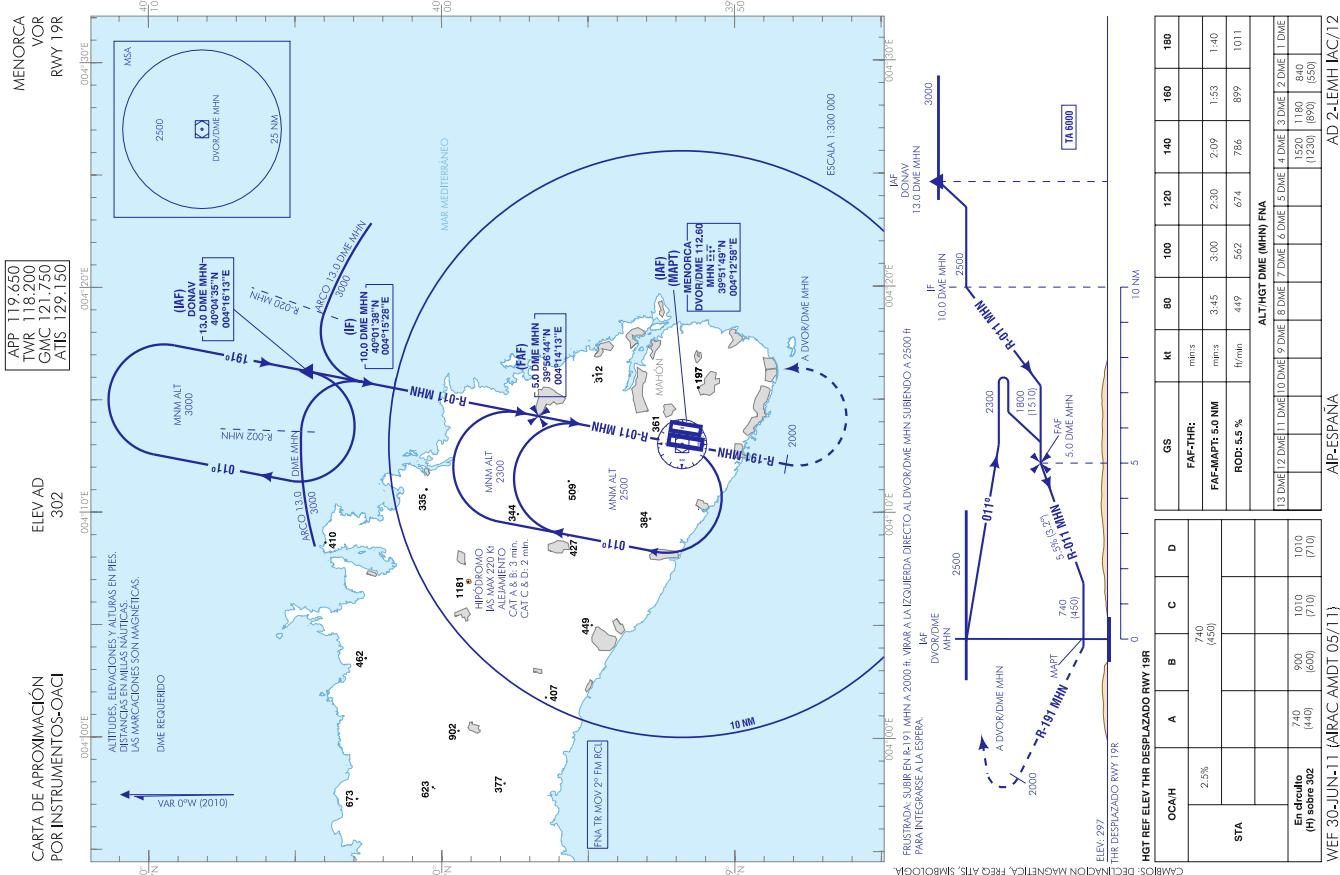
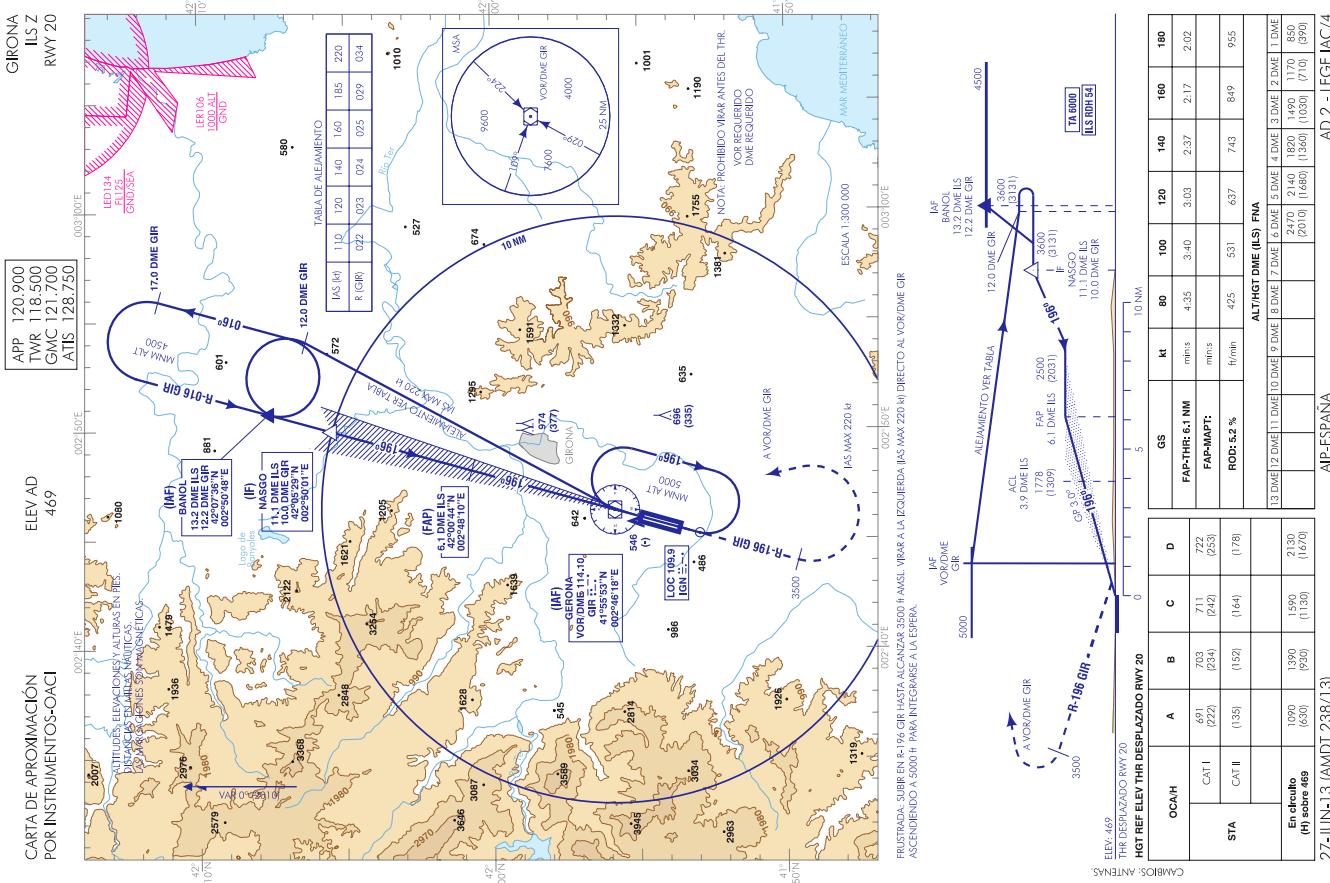


Figure 1: ATC radar screenshots









INFRAESTRUCTURES DEL TRANSPORT AERI (ITA)
Mid Term Exam - Spring semester 2014

Correct answers

Pregunta	PERM. A	PERM. B	PERM. C	PERM. D
P 01	d	c	a	c
P 02	a	c	d	a
P 03	a	d	a	b
P 04	b	a	b	b
P 05	a	a	a	a
P 06	a	c	d	a
P 07	b	a	b	b
P 08	c	c	a	a
P 09	b	c	b	c
P 10	b	a	c	d
P 11	c	b	c	d
P 12	a	a	c	a
P 13	c	a	b	d
P 14	d	d	c	b
P 15	b	a	b	d
P 16	b	c	d	b
P 17	b	d	b	c
P 18	d	b	d	d
P 19	d	a	c	c
P 20	d	d	d	d
P 21	c	c	b	d
P 22	c	b	c	c
P 23	d	d	b	d
P 24	c	c	c	d
P 25	a	c	b	d
P 26	b	a	c	a
P 27	c	b	d	b
P 28	a	b	c	c
P 29	a	d	c	d
P 30	d	d	c	a
P 31	c	c	c	c
P 32	c	b	b	b
P 33	d	d	a	d
P 34	d	d	a	a
P 35	b	b	a	d
P 36	c	d	b	c
P 37	a	c	b	d
P 38	b	a	d	a
P 39	d	d	a	b
P 40	c	a	d	c
P 41	c	c	d	b
P 42	c	a	d	d
P 43	b	d	d	d
P 44	b	a	a	d
P 45	d	b	d	c
P 46	a	b	c	c
P 47	a	c	c	d

P 48	d	c	c	c
P 49	d	a	d	a
P 50	a	b	c	a
P 51	b	d	d	d
P 52	c	a	a	d
P 53	a	c	d	a
P 54	b	b	c	d
P 55	d	c	a	c
P 56	c	a	a	d
P 57	a	d	c	a
P 58	c	a	c	d
P 59	d	b	b	a
P 60	c	b	d	a
P 61	d	b	c	d
P 62	d	a	a	a
P 63	a	c	b	c
P 64	d	d	a	b
P 65	c	c	a	c
P 66	d	b	a	b
P 67	a	d	c	c
P 68	b	b	d	c
P 69	c	a	c	b
P 70	b	b	b	a
P 71	a	d	c	d
P 72	b	c	d	b
P 73	d	d	d	a
P 74	b	a	b	a
P 75	c	c	b	a
P 76	a	d	b	c
P 77	a	d	a	d
P 78	b	b	c	c
P 79	d	c	b	c
P 80	c	d	a	b
P 81	a	c	a	b
P 82	c	c	d	d
P 83	a	a	d	d
P 84	b	d	a	c