# EAST AFRICAN SCHOOL OF AVIATION EXAMINATION

## MAIN EXAM

FLIGHT DISPATCH

SAFETY SECTION

SUBJECT: CRP - COMPUTER

Duration: 2 Hrs: 30 Min

DAY/DATE: TUESDAY; 31ST JANUARY, 2017 TIME: 1400HRS – 1630HRS

Instructions to Candidate:

1. This paper consists of Four (4) printed pages
2. Examination rules and regulations shall be adhered to
3. Answer all the questions
4. The last two pages are charts and use them where necessary

STUDENT'S NAME: ----------

ADMISSION NUMBER: ----------

**Define the following:**

1. Heading *( 1 mark)*
2. Track *( 1 mark)*
3. Drift *( 1 mark)*
4. Track error angle *( 1 mark)*
5. Groundspeed *( 1 mark)*
6. GS 520 kt,True HDG 090°,Drift angle 5° right,TAS 480 kt.SAT (static air temperature) -51°C.The W/V being experienced is*(2 marks)*
7. True HDG = 133°,TAS = 225 kt,Track (T) = 144°,GS = 206 kt.Calculate the W/V*( 2 marks)*
8. The distance between point of departure and destination is 340 NM and wind velocity in the whole area is 100°/25kt. TAS is 140kt, True Track is 135° and safe endurance 3hr and 10 min. How long will it take to reach the Point of Safe Return?*( 4 marks)*
9. An aircraft is planned to fly from position 'A' to position 'B', distance 250 NM at an average GS of 115 kt. It departs 'A' at 0900 UTC.After flying 75 NM along track from 'A'; the aircraft is 1.5 MIN behind planned time. Using the actual GS experienced, what is the revised ETA at 'B'?*( 3 marks)*
10. TAS = 198 kt,HDG (°T) = 180,W/V = 359/25.Calculate the Track(°T) and GS*( 3 marks)*
11. TAS = 270 kt, Track (T) = 260°, W/V = 275/30kt.Calculate the HDG (°T) and GS? *(4 marks)*
12. Course required = 085° (T), Forecast W/V 030/100kt, TAS = 470 kt, Distance = 265 NM. Calculate the true HDG and flight time *( 4 marks)*
13. TAS 487kt, FL 330, Temperature ISA + 15.Calculate the Mach number? *( 3 marks)*
14. An aircraft is flying at FL 330, temp. Deviation +20ºC rectified air speed 160 kt.Using a flight computer find the True Air Speed *( 2 marks)*

15. TAS = 140 kt, HDG (T) = 005°, W/V = 265/25kt.Calculate the drift and GS *(3 marks)*

16. TAS = 230 kt, HDG (T) = 250°, W/V = 205/10kt.Calculate the drift and GS *(3 marks)*

17. TAS = 227 kt, Track (T) = 316°, W/V = 205/15kt.Calculate the HDG (°T) and GS *(4 marks)*

18. True HDG = 206°, TAS = 140 kt, Track (T) = 207°, GS = 135 kt.Calculate the W/V *(2 marks)*

19.Runway direction 305°(M),Surface W/V 260°(M)/30 kt.Calculate the cross-wind component *( 2 marks)*

20. TAS = 250 kt, HDG (T) = 029°, W/V = 035/45kt.Calculate the drift and GS *(3 marks)*

21. Given a heading of 070°T, a track of 061 °T, a TAS of 120kt and a G/5 of 118kt, find the W/V *(2 marks)*

22. Given Airfield QNH 1002 mb and elevation of 5000 ft., Temp 15 Degrees Celsius, Lapse rate 2 degrees per 1000 ft., 1mb = 30 ft., deviation = 120 ft., What is the Density altitude of the above airfield *(2 marks)*

COMPLETE THE TABLE NUMBER 23. AND 24. *(12 marks)*

| TRACK | W/V | HDG T | VAR | HDG M | DEV | HDG C | CAS | PA/ TEMP | TAS | GS | DIST | TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 315 | 045/33 | | 7W | | 2E | | 190 | 3000 +15 | | | 88 | |
| 324 | 335/21 | | 6E | | 1W | | 205 | 9000 -10 | | | 105 | |

25. *(4 marks)*

| Ind Alt | Temp(C) | True Alt |
|---|---|---|
| 18000 | -30 | |
| 27000 | -50 | |

26. *(8 marks)*

| Pressure Alt | Temp(C) | Density Altitude | |
|---|---|---|---|
| | | Navigation | Formula Solution |
| 10000 | +15 | | |
| 27000 | -40 | | |

27. *(8 marks)*

| Litres | Imp Gall | US Gall | SG | Kg | lb |
|---|---|---|---|---|---|
| 1000 | | | .78 | | |
| | | | .80 | 1000 | |

28. An aircraft is flying from Oxford to Cambridge, planned track 074°M, distance 70 NM, heading of 065°M .Having flown 30NM, the pilot 'pinpoint' the aircraft position overhead Cranfield, 4NM left of the planned track. *( 6 marks)*

a. What is the track error overhead Cranfield?
b. What is the Track Made Good (TMG) from Oxford?
c. What is the expected drift?
d. What has the actual drift been?
e. What alteration of the heading should be made over Cranfield to fly direct to Cambridge?
f. What is the new heading to be flown from overhead Cranfield?

29. Given the following; CAS 190 kt cruising, Pressure altitude 9000 ft.,Temperature ISA -10°C, W/V 320/40 kt, A to B is distance 350 nm, Course 350°, Endurance 3 hours ( 4 marks)

(a) What is distance to PET

(b) What is ETA for the PET

30. Given, TAS 160kts, W/V 100/30, A to B 1620 nm, Course 030, Depart A at 09:30 UTC, Total Endurance 4hrs, Safe Endurance 3 hrs 20 mins, what are the distance, time and estimate to the PSR from "A". *( 5 marks)*