THEORETICAL KNOWLEDEGE EXAMINATION
FOR MEP(LAND) CLASS RATING
AND DIFFERENCE TRAINING

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Diamond DA42-VI **HB-LWA**

Name: ..... Flight Instructor: .....

Date: .....

☐ MEP(land) Class Rating
☐ Difference Training

Section 1) Questions to the AFM
(to be completed for MEP(land) class rating and Difference Training)

1. Power plant Hersteller Modell: Maximum Power: Continuous Power	 kW kW	....
2. Propeller Hersteller Art		....
3. Fuel Typ Spezifisches Gewicht		....
4. What is the wingspan of the DA42, incl ACL:	m	.....
5. What is the track of the landing gear (Spurweite)	m	.....
6. Minimum width for 180° turn without brakes with brakes	 m m	....
7. Maximum take-off mass?	kg	.....
8. Maximum ramp mass?	kg	.....
9. Maximum landing mass?	kg	.....
10. Maximum allowable load in the nose baggage compartment?	kg	.....
11. Maximum allowable load in the cabin baggage extension?	kg	.....
12. Maximum allowable combined load in the cabin baggage and extension baggage compartment?	kg	.....
13. What is the fuel capacity of the DA42 (Main tanks only)? Total Usable	 USG USG	....
14. What is the fuel capacity of the DA42 (aux tanks only)?		

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Total Usable	USG USG	....
15. What is the maximum allowable difference between the two main tanks?	USG	.....
16. Oil Pressure normal range?	bar	.....
17. Oil pressure maximum	bar	.....
18. Oil pressure minimum (< 1500 RPM)	bar	.....
19. Oil temperature maximum	°C	.....
20. Oil temperature minimum	°C	.....
21. Oil temperature normal range	°C	.....
22. Gear box maximum temperature	°C	.....
23. Fuel temperature maximum	°C	.....
24. Fuel temperature minimum	°C	.....
25. Coolant temperature maximum	°C	.....
26. Voltage maximum	V	.....
27. Voltage minimum	V	.....
28. Amperage maximum	A	.....
29. Airspeeds for emergency procedures? Engine failure after takeoff V_{MCA}	kts	.....
30. One engine inoperative speed for best rate of climb V_{vSE}	kts	.....
31. Landing speeds for OEI? Flaps UP: Flaps APP:	 kts kts	 ....
32. Engine Restart what is the maximum altitude for immediate restart	ft	.....
33. Restart airspeed (starter)	kts	.....
34. While attempting to start the right engine, you notice smoke and flames around the cowling. Explain the correct procedure to safe the problem:		....
35. In cruise at 7000 ft, your left engine RPM begin to oscillate. What do you do?		....

		.....
36. On a normal cockpit check at cruising altitude, you observe that your oil pressure indicator is reading 6.0 bar. What is the correct procedure?		....
37. You are cruising at 5500 ft when you notice a strange smell and observe smoke originating from under the instrument panel. Which checklist is appropriate and what do you do?		....
38. If necessary, how do you use the rear emergency exit?		....
39. Because of an empty or weak battery an EPU is used for engine start. The correct statement is:		a) Both engines shall be started with the EPU to conserve battery power b) One engine only shall be started with the EPU, the second engine shall be started with aircraft electrical power c) Night VFR or IFR flights are not permitted d) Both b) and c) is correct
40. When after an EPU start of the LH engine the RH engine will be started afterwards with the aircraft electrical power system. What is the correct procedure?		....
41. When an External Power Unit (EPU) is connected and the EPU switch is on		a) The electrical system is powered even with the electric master switch OFF b) The electrical system is powered only if the electric master switch is ON c) The electrical system is powered if the EPU switch on the instrument panel is ON d) The electrical system is powered if the avionic switch is in the ON position
42. When after an EPU start of the LH engine the RH engine will be started afterwards with the aircraft electrical power system. What is the correct answer?		a) It will result in a overheat condition of the main battery b) This will damage the excitation battery c) The battery status is checked, because if the battery is not on line or too weak it will not “buffer” the load of the RH starter motor, the

		LH alternator voltage will drop considerably, the RH starter will not operate d) It will be not possible to switch the avionics buss to ON
43. In witch conditions do you operate the alternate air supply?		....
44. The air intakes on the cowlings of the DA42 supply air for the following systems:		....
45. How many fuel tanks are there in the DA42?		....
46. To transfer fuel form the LH to the RH main tank?		a) The LH fuel control lever must be put to “crossfeed” position b) The RH fuel control lever must be put to “crossfeed” position c) Fuel transfer from one tank to the other is not possible d) The red lever on the left side of the pedestal must be pulled
47. How do you manage to balance the fuel if the RH tanks shows 10 USG and the LH tanks shows 14 USG?		a) The LH fuel control lever must be put to “crossfeed” position b) The RH fuel control lever must be put to “crossfeed” position c) Fuel transfer from one tank to the other is not possible d) The red lever on the left side of the pedestal must be pulled
48. The Ammeter shows		a) The intensity of current supplied by the alternator b) Whether the battery is charged or discharged c) The current flow from the hot battery bus to the battery bus d) The current flow from the RH main bus to the hot battery bus
49. Airspeeds for normal operation (1999 kg)		
Vso: (flaps LDG gear down)	kts	.....
Vs (clean):	kts	.....
V_X: (Short field TKOF)	kts	.....
V_X: (Short field TKOF) Flap position		.....
V_Y (Normal TKOF):	kts	.....
V_{NO}:	kts	.....
V_{FE}: Flaps APP	kts	.....
V_{NE}:	kts	.....

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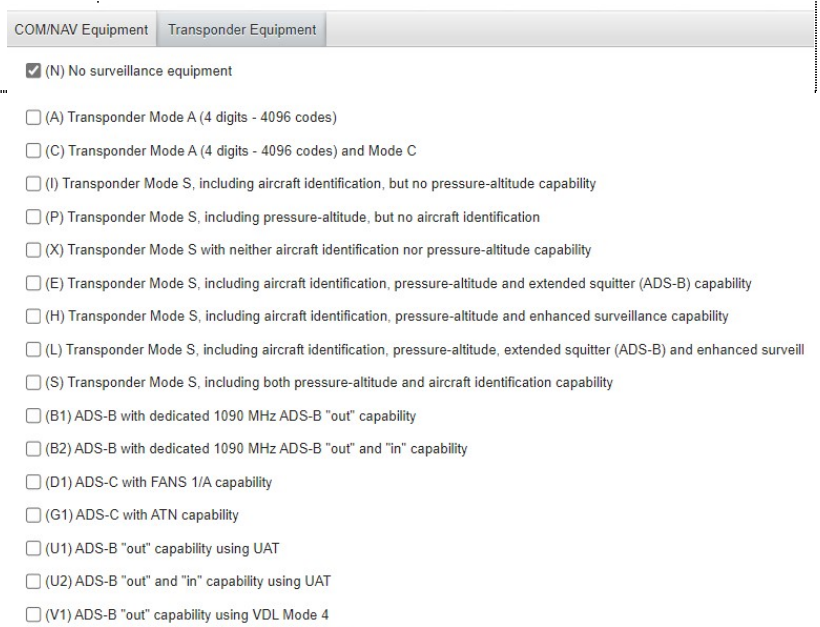
V_{YSE}:	kts	.....
V_{MCA} flaps up:	kts	.....
Vapp (flaps LDG, 1'999 kg)	kts	.....
Vapp (flaps APP, 1'999 kg) in ice	kts	.....
Performance and mass and balance Flight form A (RWY 15) to B (RWY 14) Pressure altitude cruise: 7000 ft Temperature at 7000 ft: + 1° C Airport A: SL, OAT 15° wind 150/11 kts Airport B: Elv. 2000 ft, OAT 20° C wind 320/05 kts Pilot: 80 kg Passenger 1 copi seat 70 kg Passenger 2 rear seat 75 kg Baggage nose compartment: 5 kg Deicing Fluid 25 kg Rear baggage 10 kg Fuel main tank full, aux tank empty		
50. May the flight be executed in respect of W/B		Yes or No
51. Take off distance at A:	m	.....
52. Average rate of climb from airport A to 7000 ft:	ft/min	.....
53. Total fuel flow for 70%:	USG/h	.....
54. TAS @ 7000 ft:	kts	.....
55. Landing distance at B	m	.....
56. Rate of climb OEI in LSZS @ 20°C MTOW	ft/min in %	....
57. Use of Autopilot when any ice is observed forming aft of the protected surface of the wing		....
58. ATC Flight Plan Field 10: Tick the correct boxes for the ABS-B transponder		



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59. Field 18: Tick the correct boxes for the PBN Capabilities.	☐ A1 ☐ B1 ☐ B2 ☐ B3 ☐ B4 ☐ B5 ☐ B6 ☐ C1 ☐ C2 ☐ C3 ☐ C4 ☐ D1 ☐ D2 ☐ D3 ☐ D4 ☐ L1 ☐ O1 ☐ O2 ☐ O3 ☐ O4 ☐ S1 ☐ S2 ☐ T1 ☐ T2 Save Cancel

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Section 2) Questions to the MEP(land) Class Rating
(to be completed for MEP(land) class rating only)

60. What corrective actions are needed in order to ensure directional control on a MEP aircraft		....
61. What 4 factors make on most aircrafts the left engie to be the critical Engine		1) ..... 2) ..... 3) ..... 4) .....
62. Explain the meaning of Vmc		....
63. What are 3 main drag factors on a light twin aircraft		1) ..... 2) ..... 3) .....
64. Explain the meaning of Vyse		....
65. Explain the P-P-A-A procedure		P) ..... P) ..... A) ..... A) .....
66. What are the 5 memory items in order to shut down and secure the engine on the DA42-VI aircraft		1) ..... 2) ..... 3) ..... 4) ..... 5) .....
67. What leads to the GO/NOGO decision on a MEP aircraft during take off (FSA procedure)		.....

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Examination score	
Section 1)	Section 2)
Correct Answers: _____ / 59 Incorrect Answers: _____ / 59 Score: _____ %	Correct Answers: _____ / 8 Incorrect Answers: _____ / 8 Score: _____ %
Instructor: Date: Signature:	Instructor: Date: Signature: