25. Using the Lance cruise graph on page 11 of the work booklet, determine the fuel required and estimated time interval for a cruise from Charlie to Delta, under the following conditions.

Cruise level	FL145
Temperature	–10°
Wind component	75 kt head
Distance	93 nm
Power setting	65% best power

a. Fuel: 25 USG; time: 68 min.
b. Fuel: 20 USG; time: 56 min.
c. Fuel: 23 USG; time: 70 min.
d. Fuel: 28 USG; time: 75 min.

26. Using the Lance descent graph on page 12 of the work booklet, determine the distance and time for the following descent.

Cruise	level	9,500 ft
	Area QNH	1016 hPa
	temperature	-10°
Bottom of descent	level	2,000 ft
	Area QNH	1014 hPa
	temperature	+35°
Wind component on descent		40 kt tail

a. Time: 10 min; distance: 28 gnm.
b. Time: 3 min; distance: 14 gnm.
c. Time: 10 min; distance: 18 gnm.
d. Time: 3 min; distance: 11 gnm.

27. Using the Cessna climb and cruise tables on pages 6 and 7 of the work booklet, determine the estimated time interval and flight fuel required for a flight from Echo to Foxtrot under the following conditions. (Ignore the descent at Foxtrot.)

	Cruise level	9,000 ft pressure height
Wind components	2,000	30 kt head
	5,000	35 kt head
	7,000	40 kt head
	10,000	50 kt head
Temperature at all levels		ISA+20°
Total Distance		119 nm
Cruise power setting		2,400 rpm
Departure aerodrome	elevation	1,670 ft
	QNH	1002 hPa

a. Time: 134 min; fuel: 17 USG.
b. Time: 142 min; fuel: 13 USG.
c. Time: 128 min; fuel: 12 USG.
d. Time: 140 min; fuel: 16 USG.

Appendix 5

Answers – Multiple-Choice PPL & CPL Questions

Answers

1. B	19. D	37. C	55. C
2. D	20. B	38. C	56. B
3. B	21. C	39. B	57. B
4. A	22. C	40. C	58. D
5. B	23. C	41. C	59. B
6. C	24. A	42. B	60. A
7. A	25. C	43. B	61. A
8. C	26. B	44. C	62. C
9. D	27. A	45. B	63. A
10. B	28. A	46. B	64. A
11. C	29. C	47. A	65. B
12. C	30. C	48. D	66. D
13. A	31. B	49. B	67. B
14. C	32. A	50. C	68. A
15. D	33. B	51. C	69. C
16. A	34. D	52. C	70. D
17. D	35. C	53. D	71. D
18. C	36. B	54. C	

Explanations

1. The maximum allowable longitudinal slope between runway ends is 1:50 (i.e. 2%). See page 8.

2. When departing on wet grass up to 20cm the take-off distance required should be increased by 30%. See page 13.

3. When departing the take-off distance required, sourced from the POH, should be increased by 115% to 125% by method of linear interpolation. 3,000 kg is above the lowest value but greater than the lowest value. 122% is the correct answer. Always err on the side of caution. See page 13.

52.

Item	Weight (lb)	Arm (in)	Moment/1000 in-lb (calculated)	From graph
Empty weight	1260	80	100.80	100.80 (given)
Oil	15	32	0.48	0.48 (given)
Pilot + pax (77+80) × 2.2	345	91	31.40	31.00
Pax (70+75) × 2.2	319	126	40.19	40.00
Baggage 50 × 2.2	110	151	16.61	16.60
ZFW	2,049	–	189.48 (at aft limit)	188.88
~ fuel	151 (max)	91	13.74	14.60
MTOW	2,200	–	203.22	263.48 (OK)

151 lb of fuel @ 1.58 = 95.6 litres. Answer C is correct.

53.

Item	Weight (lb)	Arm (in)	Moment/1000 in-lb (calculated)	From graph
Empty weight	1260	80	100.80	100.80 (given)
Oil	15	32	0.48	0.48 (given)
Pilot + pax (77+83)	352	31	32.03	31.60
2 pax (82+82)	361	126	45.49	46.00
Fuel 128 litres	202	91	18.38	19.80
Total	2,190	–	197.18	198.68
~ Baggage	10	151	1.51	2.00
MTOW	2,200	–	198.69	200.68 (OK)

10 lb baggage @ 2.2 = 4.5 kg. Answer D is correct.

Appendix 6

Answers – Multiple-Choice CPL Questions

Answers

1. B	**11.** B	**21.** B	**31.** C
2. A	**12.** A	**22.** D	**32.** B
3. B	**13.** B	**23.** A	**33.** A
4. C	**14.** A	**24.** D	**34.** C
5. C	**15.** A	**25.** A	**35.** C
6. C	**16.** B	**26.** C	**36.** D
7. C	**17.** D	**27.** A	**37.** B
8. C	**18.** B	**28.** C	**38.** B
9. D	**19.** C	**29.** A	**39.** A
10. A	**20.** B	**30.** D	**40.** B

5.

Flight fuel (FF) – 138 min @ 70 litres/hr	161.00 litres
Contingency fuel (CF) – 15% of FF	24.15
Final reserve fuel (FR) – 45 min @ 70 litres/hr	52.50
Holding (INTER) – 30 min @ 62 litres/hr	31.00
Taxi allowance	9.00
∴ Minimum fuel required at start-up	277.65 litres

Answer C is correct.

6.

FF – 135 min @ 15.7 USG/hr	35.33 USG
CF – 15% of FF	5.30
FR – 45 min @ 15.7 USG/hr	11.78
FF to ALT – 53 min @ 15.7 USG/hr	13.87
Holding at ALT – 15 min @ 13.8 USG/hr	3.45
Taxi allowance	2.00
∴ Minimum fuel required at start-up	71.73 USG

Answer C is correct.

7. Draw a thumbnail sketch.

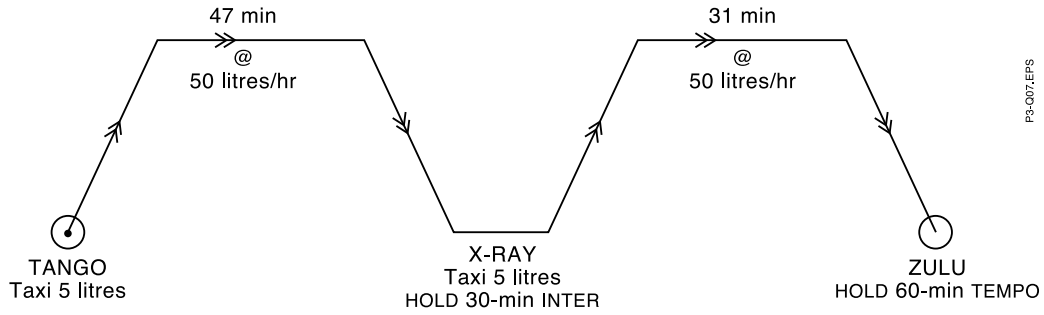

Figure A6-5

FF – (47 + 31) min @ 50 litres/hr	65.0 litres
CF – not required for AWK	–
FR – 45 min at ZULU @ 50 litres/hr	37.5
Holding – (30 + 60) min @ 50 litres/hr	75.0
Taxi allowance × 2	10.0
∴ Minimum fuel required at start-up	187.5 litres

Answer C is correct.

8.

Basic empty weight	1,925 kg
Pilot	79
Minimum fuel	240
Weight without baggage	2,244
TOW (performance limited)	2,600
Difference (pax + baggage)	356 kg

∴ Maximum passengers + baggage is 356 kg. Answer C is correct.

Note: Because the TOW is limited to 2,600 kg, in this instance there is no need to check that the ZFW is within the MZFW limit of 2,630 kg.