Examination Center DGAC

Examination Date _____

Name _____

Firstname _____

Birthday _____

1 The TODRH is the horizontal distance required between the start of the take off and the point where the take off safety speed is reached as well as a height of: (1.00 P.)

[A] 15 ft above the take off surface and a positive climb gradient in case of failure of the critical engine

[B] 35 ft above the take off surface and a positive climb gradient in case of failure of the critical engine

[C] 35 ft above the take off surface and a positive or zero climb gradient in case of failure of the critical engine

[D] 50 ft above the take off surface and a positive or zero climb gradient in case of failure of the critical engine

2 An aircraft is flying at MACH 0.84 at FL 330. The static air temperature is -48°C and the headwind component 52 Kt. At 1338 UTC the controller requests the pilot to cross the meridian of 030W at 1500 UTC. Given the distance to go is 570 NM, the reduced MACH No. should be: (1.00 P.)

[A] 0.72

[B] 0.80

[C] 0.76

[D] 0.78

3 The take off weight is the weight of the helicopter: (1.00 P.)

[A] at the start of the take off

[B] at the start of taxi if applicable

[C] at the time the doors are closed

[D] at the moment when the engine or engines are started

4 Two identical turbojet aeroplanes (whose specific fuel consumption is assumed to be constant) are in a holding pattern at the same altitude. The mass of the first one is 95 000 kg and its hourly fuel consumption is equal to 3100 kg/h. Since the mass of the second one is 105 000 kg, its hourly fuel consumption is: (1.00 P.)

[A] 3259 kg/h

[B] 3426 kg/h

[C] 3602 kg/h

[D] 3787 kg/h

5 The distance required for an aborted take off is the horizontal distance required between the start of the take off and the point where the helicopter stops following the failure of: (1.00 P.)

[A] the critical engine and the interruption of the take off at the moment the failure accured

[B] an engine and the interruption of the take off at the moment the failure accured

[C] the critical engine and the interruption of the take off one second after the failure

[D] the critical engine and the interruption of the take off at the take off decision point

6 A precautionary forced landing is a landing: (1.00 P.)

[A] which is unavoidable and in which it can be reasonably hoped there will be no injuries

[B] in which it can be reasonably hoped there will be no injuries

[C] or ditching which is unavoidable and in which it can be reasonably hoped that no injuries will be suffered by the helicopter's occupants nor by people on the ground.

[D] or ditching which is unavoidable and in which it can be reasonably hoped there will be no injuries to the occupants of the helicopter.

7 The centre of gravity of a body is that point (1.00 P.)

[A] where the sum of the moments from the external forces acting on the body is equal to zero.

[B] through which the sum of the forces of all masses of the body is considered to act.

[C] which is always used as datum when computing moments.

[D] where the sum of the external forces is equal to zero.

8 The distance necessary for a landing is the horizontal distance required to land: (1.00 P.)

[A] land from a point 50 ft above the landing surface.

[B] and come to a full stop from a point 15 ft above the landing surface.

[C] and come to a full stop from a point 35 ft above the landing surface.

[D] and come to a full stop from a point 50 ft above the landing surface.

9 For a given configuration, the stall speed of an aeroplane will be highest when loaded: (1.00 P.)

[A] to the maximum allowable mass with the most forward CG.

[B] to a low total mass with the most aft CG.

[C] to the maximum allowable mass with the most aft CG.

[D] to a low total mass with the most forward CG.

10 For a helicopter the distance DR is: (1.00 P.)

[A] the horizontal distance travelled from the beginning of the take-off

[B] the horizontal distance travelled since entering hovering flight

[C] the rotor's diameter

[D] the horizontal distance travelled from the end of the available runway length

11 On a given path, it is possible to chose between four flight levels (FL), each associated with a mandatory flight Mach Number (M). The flight conditions, static air temperature (SAT) and headwind component (HWC) are given below:

FL 370 - M = 0.80 Ts = -60°C HWC = -15 kt
FL 330 - M = 0.78 Ts = -60°C HWC= - 5 kt
FL 290 - M = 0.80 Ts = -55°C HWC = -15 kt
FL 270 - M = 0.76 Ts = -43°C HWC = 0

The flight level allowing the highest ground speed is: (1.00 P.)

[A] FL270

[B] FL290

[C] FL370

[D] FL330

12 A platform is a heliport situated: (1.00 P.)

[A] on a floating or fixed structure at sea

[B] at least 3 m above the surrounding surface

[C] 3 m above the surface on a fixed structure at sea

[D] at least 35 ft above the surrounding surface

13 A helicopter in performance class3 must be certified in: (1.00 P.)

[A] category A or B

[B] category B

[C] category A

[D] no category

14 In performance class 1, with one engine failed and the others operating normally, the helicopter's weight at the estimated time of landing must be such that a rate of climb of at least 100ft/mn at 200 ft above the altitude of: (1.00 P.)

[A] the alternate heliport

[B] the take off heliport

[C] the destination or alternate/diversion heliport

[D] the destination heliport

15 In relation to the net take-off flight path, the required 35 ft vertical distance to clear all obstacles is: (1.00 P.)

[A] the height at which power is reduced to maximum climb thrust.

[B] the minimum vertical distance between the lowest part of the aeroplane and all obstacles within the obstacle domain.

[C] the height by which acceleration and flap retraction should be completed.

[D] based on pressure altitudes.

16 A public transport aeroplane with reciprocating engines, the final reserve should be: (1.00 P.)

[A] fuel to fly for 1 hour at holding speed

[B] fuel to fly for 30 minutes at holding speed

[C] fuel to fly for 45 minutes

[D] fuel to fly for 2 hours

17 In performance class 1, having cleared the terraced heliport or heliplatform's edge, in case of an engine failure after the take-off decision point, the helicopter can clear any obstacle until the end of the take-off required distance with a margin of: (1.00 P.)

[A] at least 15 ft vertically

[B] at least 35 ft vertically

[C] 35 ft

[D] at least 35 ft

18 Comparing a forward CG position with an aft one, the forward CG position will cause a (1.00 P.)

[A] decrease of the stalling speed.

[B] decrease in the landing speed.

[C] tendency to yaw to the right on take-off.

[D] decrease in range.

19 In performance class 1 when there is a head wind component, an operator, when calculating take-off performance may take into account not: (1.00 P.)

[A] more than 150% of the reported headwind component

[B] more than 80% of the reported headwind component

[C] more than 50% of the reported headwind component

[D] less than 50% of the reported headwind component

20 In performance class 2 when there is a head wind component, an operator, when calculating take-off performance may take into account not: (1.00 P.)

[A] more than 80% of the reported headwind component

[B] more than 50% of the reported headwind component

[C] more than 150% of the reported headwind component

[D] less than 50% of the reported headwind component

21 In a flight plan when the destination aerodrome is A and the alternate aerodrome is B, the final reserve fuel for a turbojet engine aeroplane corresponds to: (1.00 P.)

[A] 30 minutes holding 1,500 feet above aerodrome B

[B] 15 minutes holding 2,000 feet above aerodrome A

[C] 30 minutes holding 1,500 feet above aerodrome A

[D] 30 minutes holding 2,000 feet above aerodrome B

22 During certification flight testing of a transport aeroplane, the distances measured from brake release to the 35 feet point are equal to:
1547 m with all engines running
1720 m with failure of critical engine at V1, with all other things remaining unchanged.
The take-off distance adopted for the certification file is: (1.00 P.)

[A] 1779 m.

[B] 1547 m.

[C] 1978 m.

[D] 1720 m.

23 An increase in ambient temperature: (1.00 P.)

[A] does not influence performance in performance class 1 and especially the take-off weight

[B] generally reduces performance in performance class 1 and especially the take-off weight

[C] increases or does not influence take-off weight depending on the aircraft type

[D] increases performance in performance class 1 and especially the take-off weight

24 An increase in density altitude: (1.00 P.)

[A] increases performance in performance class 1 and especially the take-off weight

[B] does not influence performance in performance class 1 and especially the take-off weight

[C] increases or does not influence take-off weight dependingon the aircraft type

[D] generally reduces performance in performance class 1 and decreases especially the take-off weight

25 The maximum load per running metre of an aircraft is 350 kg/m. The width of the floor area is 2 metres. The floor strength limitation is 300 kg per square metre. Which one of the following crates (length x width x height) can be loaded directly on the floor? (1.00 P.)

[A] A load of 500 kg in a crate with dimensions 1.5 m x 1 m x 1 m.

[B] A load of 400 kg in a crate with dimensions 1.2 m x 1.2 m x 1.2 m.

[C] A load of 400 kg in a crate with dimensions 1.4 m x 0.8 m x 0.8 m.

[D] A load of 700 kg in a crate with dimensions 1.8 m x 1.4 m x 0.8 m.

26 An increase in pressure altitude: (1.00 P.)

[A] increases performance in class 1 and especially the take-off weight

[B] generally reduces performance in class 1 and especially the take-off weight

[C] does not influence performance in class 1 and especially not on the take-off weight

[D] increases or does not influence take-off weight depending to aircraft type

27 Given the following:
- Maximum structural take-off mass 48 000 kg
- Maximum structural landing mass: 44 000 kg
- Maximum zero fuel mass: 36 000 kg
-Taxi fuel: 600 kg
-Contingency fuel: 900 kg
-Alternate fuel: 800 kg
-Final reserve fuel: 1 100 kg
-Trip fuel: 9 000 kg

The actual Take Off Mass can never be higher than: (1.00 P.)

[A] 48 400 kg

[B] 53 000 kg

[C] 47 800 kg

[D] 48 000 kg

28 The Trip Fuel for a jet aeroplane to fly from the departure aerodrome to the destination aerodrome is 5 350 kg. Fuel consumption in holding mode is 6 000 kg/h. The quantity of fuel which is needed to carry out one go-around and land on the alternate airfield is 4 380 kg. The destination aerodrome has a single runway.

What is the minimum quantity of fuel which should be on board at take-off? (1.00 P.)

[A] 13 230 kg

[B] 13 000 kg

[C] 14 730 kg

[D] 11 730 kg

29 In straight and level flight at constant indicated airspeed, a reduction in pressure altitude: (1.00 P.)

[A] increases or reduces the power required depending on the airspeed

[B] reduces the power required

[C] does not affect the power required

[D] increases the power required

30 Flying in a straight line at constant airspeed, a head wind: (1.00 P.)

[A] increases the climb gradient

[B] decreases the climb gradient

[C] increases the distance required to descent 100 m

[D] has no effect on the climb gradient

31 In performance class2, when the wind measuring equipment has not received official approval, and there is a headwind component, to determine landing performance an operator may take account of at: (1.00 P.)

[A] most, 40% of the reported headwind component

[B] most, 50% of the reported headwind component

[C] least, 50% of the reported headwind component

[D] most, 80% of the reported headwind component

32 In performance class1, when the wind measuring equipment has not received official approval, and there is a headwind component, to determine landing performance an operator may take account of at (1.00 P.)

[A] least, 50% of the reported headwind component

[B] most, 40% of the reported headwind component

[C] most, 50% of the reported headwind component

[D] most, 80% of the reported headwind component

33 For turbojet engine driven aeroplane, given:

Taxi fuel	600 kg
Fuel flow for cruise	10 000 kg/h
Fuel flow for holding	8 000 kg/h
Alternate fuel	10 200 kg
Planned flight time to destination	6 h
Forecast visibility at destination	2000 m

The minimum ramp fuel required is: (1.00 P.)

[A] 79 200 kg

[B] 76 100 kg

[C] 77 800 kg

[D] 80 500 kg

34 In flight level, in class 2 performance, with one engine failed and the others operating, at 1000 ft above any obstacle along his road, the weight of the helicopter must allow it to climb: (1.00 P.)

[A] at least 50 ft/mn

[B] at least 100 ft/mn

[C] at a no definit value by the autority

[D] at least 150 ft/mn

35 The maximum zero-fuel mass:
1- is a regulatory limitation
2- is calculated for a maximum load factor of +3.5 g
3- is based on the maximum permissible bending moment at the wing root
4- is defined on the assumption that fuel is consumed from the outer wings tank first
5- is defined on the assumption that fuel is consumed from the centre wing tank first
The combination of correct statements is: (1.00 P.)

[A] 1, 3, 5

[B] 2, 3, 4

[C] 1, 2, 3

[D] 2, 3, 5

36 In class 2 performance, with one engine failed and the others operating, a helicopter's weight at the estimated landing time must allow it to climb at least at: (1.00 P.)

[A] 150ft/mn at 1000ft above the destination heliport

[B] 150ft/mn at 1000ft above the destination and the alternate heliports

[C] 150ft/mn at 200ft above the destination and the alternate heliports

[D] 150ft/mn at 200ft above the destination heliport

37 At a given altitude, when a turbojet aeroplane mass is increased by 5% - assuming the engines specific consumption remains unchanged -, its hourly consumption is approximately increased by: (1.00 P.)

[A] 2.5%

[B] 7.5%

[C] 10%

[D] 5%

38 For take off with a tail wind component in class 2 performance an operator must take account of at least: (1.00 P.)

[A] 150% of the reported tail wind component

[B] 80% of the reported tail wind component

[C] 120% of the reported tail wind component

[D] 50% of the reported tail wind component

39 If nose wheel moves aft during gear retraction, how will this movement affect the location of the centre of gravity (cg) on the aircraft? (1.00 P.)

[A] The cg location will change, but the direction cannot be told the information given.

[B] It will cause the cg to move aft.

[C] It will cause the cg to move forward.

[D] It will not affect the cg location.

40 For take off with a tail wind component in class 1 performance an operator must take account of at least: (1.00 P.)

[A] 80% of the reported tail wind component

[B] 50% of the reported tail wind component

[C] 120% of the reported tail wind component

[D] 150% of the reported tail wind component

41 In class 1 performance, with one engine failed and the others operating, a helicopter's weight at the estimated landing time must allow it to climb at least at: (1.00 P.)

[A] 150ft/mn at 1000ft above the destination and the alternate heliports

[B] 150ft/mn at 1000ft and 100 ft/mn at 200ft , above the destination and the alternate heliports

[C] 150ft/mn at 1000ft and 100 ft/mn at 200ft , above the destination heliport

[D] 100 ft/mn at 200ft , above the destination and the alternate heliports

42 Considering the take-off decision speed V1, which of the following is correct? (1.00 P.)

[A] V1 may not be less than V2min, the minimum take-off safety speed.

[B] If an engine failure is recognized before reaching V1, the take-off must be aborted.

[C] V1 is sometimes greater than the rotation speed VR.

[D] If an engine failure is recognized after reaching V1, the take-off must be aborted.

43 Performance planning is required to ensure that: (1.00 P.)

[A] The fuel is sufficient for the flight.

[B] The space required for a manoeuvre is less than the space available.

[C] The helicopter is landed correctly.

[D] The aircraft and crew are capable of making the flight.

44 A helicopter which has no guaranteed 'stay-up' ability in the event of an engine failure is certified in: (1.00 P.)

[A] Category A.

[B] Category D.

[C] Category B.

[D] Category C.

45 What will be the influence on the aeroplane performance if aerodrome pressure altitude is increased? (1.00 P.)

[A] It will decrease the take-off run.

[B] It will increase the take-off distance.

[C] It will increase the take-off distance available.

[D] It will decrease the take-off distance.

46 If a pilot lands at an aerodrome other than the destination aerodrome specified in the flight plan, he must ensure that the ATS unit at the destination aerodrome is informed within a certain number of minutes of his planned ETA at destination. This number of minutes is: (1.00 P.)

[A] 45

[B] 30

[C] 15

[D] 10

47 The responsibility for ensuring that the performance claimed for a helicopter can be achieved belongs to: (1.00 P.)

[A] The despatcher.

[B] The operator.

[C] The manufacturer.

[D] The commander.

48 Performance such that, in the event of failure of a critical power unit, enables a helicopter to land within the rejected take-off distance available is: (1.00 P.)

[A] Performance Class 4.

[B] Performance Class 2.

[C] Performance Class 3.

[D] Performance Class 1.

49 At the flight preparation stage, the following parameters in particular are available for determining the mass of the aircraft:
1- Dry operating mass
2- Operating mass
Which statement is correct: (1.00 P.)

[A] The operating mass is the mass of the aircraft without take-off fuel.

[B] The dry operating mass includes take-off fuel.

[C] The dry operating mass includes fixed equipment needed to carry out a specific flight.

[D] The operating mass includes the traffic load.

50 Performance Class 2 helicopters shall have a maximum approved seating configuration of: (1.00 P.)

[A] More than 19.

[B] 19 or less but more than 9.

[C] 29 or more.

[D] 19 or more.

51 Performance Class 3 helicopters are certified in: (1.00 P.)

[A] Category A.

[B] Category A or B.

[C] Category B.

[D] They need not be certified in Category A or B.

52 Given that the characteristics of a three engine turbojet aeroplane are as follows:
Thrust = 50 000 Newton / Engine
$g = 10\ m/s^2$
Drag = 72 569 N
Minimum steady gradient of climb (2nd segment) = 2.7%
SIN(Angle of climb) = (Thrust- Drag) / Weight
The maximum take-off mass under 2nd segment conditions is: (1.00 P.)

[A] 286 781 kg

[B] 74 064 kg

[C] 209 064 kg

[D] 101 596 kg

53 Which of the following corresponds to zero fuel mass? (1.00 P.)

[A] Operating mass plus luggage of passengers and cargo.

[B] Operating mass plus passengers and cargo.

[C] The take-off mass of an aeroplane minus all usable fuel.

[D] Take-off mass minus fuel to destination and alternate.

54 A helicopter of Performance Class 1 must achieve, on take-off, a rate of climb of: (1.00 P.)

[A] 1000 ft/min at 1000 ft.

[B] 100 ft/min at 200 ft.

[C] 100 ft/min at 300 m

[D] 150 ft/min at 60 m.

55 An elevated heliport or helideck is defined as one which is above the surrounding level by: (1.00 P.)

[A] 3 ft

[B] 10 m

[C] 13 m

[D] 3 m

56 For the calculation of MTOW for a Performance Class 1 helicopter, the following factoring of reported tail-wind is used: (1.00 P.)

[A] 50%

[B] 75%

[C] 100%

[D] 150%

57 A repetitive flight plan (RPL) is filed for a scheduled flight: Paris-Orly to Angouleme, Paris Orly as alternate. Following heavy snow falls, Angouleme airport will be closed at the expected time of arrival. The airline decides before departure to plan a re-routing of that
flight to Limoges. (1.00 P.)

[A] The airline's "Operations " Department has to transmit a change in the RPL at the ATC office, at least half an hour before the planned time of departure.

[B] It is not possible to plan another destination and the flight has to be simply cancelled that day (scheduled flight and not chartered).

[C] The pilot-in-command must advise ATC of his intention to divert to Limoges at least 15 minutes before the planned time of arrival.

[D] The RPL must be cancelled for that day and a specific flight plan has to be filed.

58 The take-off path of a helicopter, from the start of take-off, extends to a point above the take-off surface, which is: (1.00 P.)

[A] 100 ft

[B] 1000 ft

[C] 1500 ft

[D] 500 ft

59 Given that:
- Maximum structural take-off mass: 146 000 kg
- Maximum structural landing mass: 93 900 kg
- Maximum zero fuel mass: 86 300 kg
- Trip fuel: 27 000 kg
- Taxi fuel: 1 000 kg
- Contingency fuel: 1350 kg
- Alternate fuel: 2650 kg
- Final reserve fuel: 3000 kg

The actual Take Off Mass can never be higher than: (1.00 P.)

[A] 146 000 kg.

[B] 120 900 kg.

[C] 121 300 kg.

[D] 120 300 kg.

60 Assuming that an engine fails at some point during take-off, a helicopter of Performance Class 1 must be able to clear all obstacles, vertically, by: (1.00 P.)

[A] 10.7 ft in VFR

[B] 35 m in IFR

[C] 10.7 m + .01 DR in IFR

[D] 35 m in VFR

61 The minimum climb gradient required on the 2nd flight path segment after the take-off of a jet aeroplane is defined by the following parameters:
1 Gear up
2 Gear down
3 Wing flaps retracted
4 Wing flaps in take-off position
5 N engines at the take-off thrust
6 (N-1) engines at the take-off thrust
7 Speed over the path equal to V2 + 10 kt
8 Speed over the path equal to 1.3 VS
9 Speed over the path equal to V2
10 At a height of 35 ft above the runway

The correct statements are: (1.00 P.)

[A] 2, 3, 6, 9

[B] 1, 4, 6, 9

[C] 1, 5, 8, 10

[D] 1, 4, 5, 10

62 Assuming an engine failure has occurred during take-off, a Performance Class 1 helicopter which plans a turn in the climb of more than 15° must be capable of clearing vertical obstructions by an extra: (1.00 P.)

[A] 3 m

[B] 35 ft

[C] 15 ft

[D] 7R

63 From the options given below select those flights which require ATC flight plan notification:

I - Any Public Transport flight.
2 - Any IFR flight
3 - Any flight which is to be carried out in regions which are designated to ease the provision of the Alerting Service or the operations of Search and Rescue.
4 - Any cross-border flights
5 - Any flight which involves overflying water (1.00 P.)

[A] 1,5

[B] 1,2,3

[C] 2,4

[D] 3,4,5

64 When planning obstacle avoidance on the take-off path of a Performance Class 1 helicopter which has suffered an engine failure, consideration need not be given to obstacles which are nearer than: (1.00 P.)

[A] 30 m +.15 DR for VFR

[B] 1.5 x length of the helicopter +.15 DR for IFR

[C] 2 x length of helicopter

[D] 30 ft

65 When en-route in a Performance Class 1 helicopter which has had an engine failure, the mass of the aircraft must be such that a rate of climb may be achieved and maintained. When not visual with the surface, that rate of climb is: (1.00 P.)

[A] 50 ft/min at an altitude of 2000 ft in mountainous areas.

[B] 100 ft/min at an altitude of 300 m.

[C] 150 ft/min at an altitude of 1000 ft.

[D] 50 ft/min at an altitude of 300 ft.

66 On an aeroplane without central fuel tank, the maximum Zero Fuel Mass is related to: (1.00 P.)

[A] Maximum Structural Take-Off Mass.

[B] wing loaded trip fuel.

[C] variable equipment for the flight.

[D] the bending moment at the wing root.

67 In descent, with one engine inoperative, a helicopter with Performance Class 1 must follow a flight path which clears all obstacles vertically by: (1.00 P.)

[A] 300 m

[B] 600 m

[C] 1000 m

[D] 10 nm

68 An aircraft flies at a TAS of 380 kt. It flies from A to B and back to A. Distance AB = 480 NM. When going from A to B, it experiences a headwind component = 60 kt. The wind remains constant.
The duration of the flight will be: (1.00 P.)

[A] 2h 32min

[B] 2h 10min

[C] 2h 35min

[D] 3h 00min

69 If, during descent in a Performance Class 1 helicopter which has one engine inoperative, fuel is to be jettisoned, the fuel contents should be kept to a figure which enables the aircraft to carry out: (1.00 P.)

[A] A hold.

[B] A diversion.

[C] A safe forced landing.

[D] A safe let-down procedure.

70 Assuming one engine inoperative in a helicopter with Performance Class 1, during an approach to land, the following minimum rate of climb must be achievable: (1.00 P.)

[A] At 150 ft 1000 ft/min

[B] At 200 ft 60 m/sec

[C] At 150 ft 300 ft/min

[D] At 60 m 100 ft/min

71 Minimum control speed on the ground, VMCG, is based on directional control being maintained by: (1.00 P.)

[A] primary aerodynamic control, nose wheel steering and differential braking.

[B] primary aerodynamic control and nose wheel steering.

[C] primary aerodynamic control only.

[D] nose wheel steering only.

72 When landing, a helicopter with Performance Class 1 and one engine inoperative must be able to land within the LDAH, or, if carrying out a baulked appoach, must clear, vertically, all obstructions by: (1.00 P.)

[A] 4.5 m

[B] 15 m

[C] 35 ft

[D] 35 m

73 Given are:
- Maximum structural take-off mass: 72 000 kg
- Maximum structural landing mass: 56 000 kg
- Maximum zero fuel mass: 48 000 kg
- Taxi fuel: 800 kg
- Trip fuel: 18 000 kg
- Contingency fuel: 900 kg
- Alternate fuel: 700 kg
- Final reserve fuel: 2 000 kg

The actual take-off mass can never be higher than: (1.00 P.)

[A] 74 000 kg

[B] 69 600 kg

[C] 70 400 kg

[D] 72 000 kg

74 With one engine inoperative, a helicopter with Performance Class 1, when landing at an elevated heliport, must be able to clear all obstructions vertically by: (1.00 P.)

[A] 35 ft

[B] A safe margin

[C] 4.5 m

[D] 15 m

75 When planning for landing a Performance Class 1 helicopter, the following information must be considered: (1.00 P.)

[A] The expected ambient pressure at the heliport.

[B] Not more than 75% of forecast headwind.

[C] Take-off technique.

[D] Any expected change in mass during flight.

76 On an ATC flight plan you are required to indicate in the box marked "speed" the planned speed for the first part of the cruise or for the entire cruise.
This speed is: (1.00 P.)

[A] The equivalent airspeed

[B] The indicated airspeed

[C] The true airspeed

[D] The estimated ground speed

77 Helicopters operated in Performance Class 2 are certified in: (1.00 P.)

[A] Any of Category A, B or C.

[B] Category B.

[C] Category A.

[D] Category C.

78 The take-off runway performance requirements for transport category aeroplanes are based upon: (1.00 P.)

[A] one engine inoperative only.

[B] failure of the critical engine or all engines operating whichever requirement gives the greater distance.

[C] all engines operating only.

[D] failure of the critical engine only.

79 For a Performance Class 2 helicopter with one engine inoperative, on take-off, the rate of climb at 1000 ft above the heliport must be at least: (1.00 P.)

[A] 150 ft/min

[B] 100 ft/min

[C] 300 ft/min

[D] 50 ft/min

80 030-002.jpg
Where is the centre of gravity of the aeroplane in the diagram? (1.00 P.)

Siehe Anlage 1

[A] 32.29 cm aft of datum.

[B] 26.57 cm forward of datum.

[C] 32.29 cm forward of datum.

[D] 26.57 cm aft of datum.

81 The part of the take-off path during which, in a helicopter of Performance Class 2, an engine failure would result in a forced landing must be flown in: (1.00 P.)

[A] VMC.

[B] IMC.

[C] Conditions of weather and light in which a safe landing is possible.

[D] A headwind.

82 Which of the following distances will increase if you increase V1, but VR remains unchanged? (1.00 P.)

[A] Take-off run

[B] Take-off distance

[C] All Engine Take-off distance

[D] Accelerate Stop Distance

83 On the take-off of a Performance Class 2 helicopter from an elevated heliport, the take-off weight must be such that if one engine becomes inoperative at or after DPATO: (1.00 P.)

[A] The helicopter can come to the hover.

[B] The helicopter may continue its flight.

[C] There is sufficient power to accelerate to Vno.

[D] A safe rejected landing may be made.

84 When planning for one engine inoperative in the cruise, a helicopter of Performance Class 2 must be able to maintain a rate of climb of at least: (1.00 P.)

[A] 50 ft/min at 2000 ft in mountainous areas

[B] 100 ft/min

[C] 150 ft/min at 300 m

[D] 100 ft/min at 1000 ft

85 Which of the following answers is true? (1.00 P.)

[A] V1 is higher VR

[B] V1 is higher VLOF

[C] V1 is lower VMCG

[D] V1 is lower or equal to VR

86 The centre of gravity location of the aeroplane is normally computed along the: (1.00 P.)

[A] longitudinal axis.

[B] lateral axis.

[C] vertical axis.

[D] horizontal axis.

87 When allowing a helicopter to descend to a level, which can be maintained, on the remaining power units, this tecnique is called: (1.00 P.)

[A] Auto level

[B] Controlled descent

[C] Self-levelling

[D] Drift-down

88 When calculating the performance of a Class 2 helicopter with one engine inoperative on the approach to land, the following must be considered: (1.00 P.)

[A] The pressure altitude.

[B] The height of obstructions on the go round.

[C] The surface of the landing site.

[D] The ETA.

89 The length of a clearway may be included in: (1.00 P.)

[A] the take-off run available.

[B] the accelerate-stop distance available.

[C] the take-off distance available.

[D] the distance to reach V1.

90 When landing a Performance Class 2 helicopter with one engine inoperative, the aircraft must be able to carry out a baulked landing, and clear all obstacles, vertically by: (1.00 P.)

[A] A safe margin

[B] 35 m

[C] 35 ft

[D] 10.7 m

91 In mass and balance calculations which of the following describes the datum? (1.00 P.)

[A] It is the point on the aircraft designated by the manufacturers from which all centre of gravity measurements and calculations are made.

[B] It is the most forward position of the centre of gravity.

[C] It is the distance from the centre of gravity to the point through which the weight of the component acts.

[D] It is the most aft position of the centre of gravity.

92 When calculating the landing weight of a Performance Class 2 helicopter with one engine inoperative, the following must be considered: (1.00 P.)

[A] The headwind.

[B] The tailwind.

[C] 50% of the forecast headwind.

[D] The passengers and freight to be uplifted.

93 Performance Class 3 may be defined, for a single engined helicopter such that, if an engine becomes inoperative: (1.00 P.)

[A] The aircraft is in Category A and B.

[B] A forced landing will result.

[C] A forced landing is at the commander's discretion.

[D] A forced landing may result.

94 How does runway slope affect allowable take-off mass, assuming other factors remain constant and not limiting? (1.00 P.)

[A] A downhill slope increases allowable take-off mass.

[B] A downhill slope decreases allowable take-off mass.

[C] Allowable take-off mass is not affected by runway slope.

[D] An uphill slope increases the allowable take-off mass.

95 Minimum weather limits are applied to Helicopter Class 3 operations. These are: (1.00 P.)

[A] Cloud ceiling is less than 600 ft above local surface.

[B] Visibility is less than 600 m.

[C] Cloud ceiling is 600 ft above local surface.

[D] Visibility is 800 m.

96 A hostile sea area is defined as being: (1.00 P.)

[A] Where there are few shipping lanes.

[B] South of 45°S.

[C] South of 45°N.

[D] Where Search and Rescue response is too quick.

97 An aircraft has its centre of gravity located 7 metres from the datum line and it has a weight of 49000 N. The moment about the datum is: (1.00 P.)

[A] 343 000 N/m.

[B] 7000 Nm.

[C] 343 000 Nm.

[D] 1.43 Nm.

98 Performance Class 3 operations to or from helidecks are: (1.00 P.)

[A] Not carried out by some operators.

[B] Never made.

[C] Made as a matter of routine.

[D] Made in daylight only.

99 Which one of the following is correct? (1.00 P.)

[A] Arm = Force X Moment

[B] Moment = Force / Arm

[C] Arm = Force / Moment

[D] Arm = Moment / Force

100 At night, operations in Performance Class 3 helicopters are: (1.00 P.)

[A] Only allowed with a good power margin.

[B] Never carried out.

[C] Routinely carried out.

[D] Only allowed In good moonlight.

101 The following parameters affect the take off ground run:
1 decreasing take off mass
2 increasing take off mass
3 increasing density
4 decreasing density
5 increasing flap setting
6 decreasing flap setting
7 increasing pressure altitude
8 decreasing pressure altitude
Which parameters will decrease the take off ground run? (1.00 P.)

[A] 1, 4, 6 and 8

[B] 1, 3, 5 and 8

[C] 2, 4, 5 and 7

[D] 2, 3, 6 and 7

102 The mass of a helicopter with Performance Class 3 must be such that the following is always possible: (1.00 P.)

[A] A hover IGE.

[B] A hover OGE.

[C] A vertical climb > 200 ft per min.

[D] A hover.

103 Given:
Total mass: 7500 kg
Centre of gravity (cg) location station: 80.5
Aft cg limit station: 79.5
How much cargo must be shifted from the aft cargo compartment at station 150 to the forward cargo compartment at station 30 in order to move the cg location to the aft limit? (1.00 P.)

[A] 65.8 kg.

[B] 62.5 kg.

[C] 68.9 kg.

[D] 73.5 kg.

104 In the cruise, a helicopter with Performance Class 3, must be able to fly at: (1.00 P.)

[A] The minimum flight altitude.

[B] VNE.

[C] The normal range speed.

[D] Minimum power speed.

105 What is the result of a large take off flap setting compared to a small take off flap setting on required Take-off Distance (TOD) and the field length limited Take-off Mass (TOM)? (1.00 P.)

[A] Decreased TOD required and decreased field length limited TOM.

[B] Decreased TOD required and increased field length limited TOM.

[C] Increased TOD required and decreased field length limited TOM.

[D] Increased TOD required and increased field length limited TOM.

106 In the context of performance planning, DR means: (1.00 P.)

[A] The horizontal distance to the first significant obstacle.

[B] The range to the first waypoint.

[C] The horizontal distance remaining to the end of the TODAH.

[D] The horizontal distance travelled from the end of the take-off distance available.

107 Landing distance required means: (1.00 P.)

[A] The distanced required to accelerate to Vtoss.

[B] The distance required to accelerate from rest to a specified point on the take-off path.

[C] The distance from a specified point on the approach until the helicopter comes to rest.

[D] The distance required for a running landing.

108 030-004.jpg
A jet aeroplane, with the geometrical characteristics shown in the appendix, has a take-off weight (W) of 460 000 N and a centre of gravity (point G on annex) located at 15.40 m from the zero reference point.
At the last moment the station manager has 12 000 N of freight added in the forward compartment at 10 m from the zero reference point.
The final location of the centre of gravity, calculated in percentage of mean aerodynamic chord AB (from point A), is equal to: (1.00 P.)

Siehe Anlage 2

[A] 27.5 %.

[B] 16.9 %.

[C] 30.4 %.

[D] 35.5 %.

109 R means: (1.00 P.)

[A] Rotor radius.

[B] Rotor diameter.

[C] Rotor speed.

[D] Rotor area.

110 TLOF means: (1.00 P.)

[A] The speed for translational lift.

[B] The length of an operational runway (in feet).

[C] An area for touch down and lift off.

[D] The person in charge of take-offs and landings.

111 How is VMCA influenced by increasing pressure altitude? (1.00 P.)

[A] VMCA decreases with increasing pressure altitude.

[B] VMCA decreases with increasing pressure altitude.

[C] VMCA increases with increasing pressure altitude.

[D] VMCA decreases with pressure altitude higher than 4000 ft.

112 Vx means the speed for: (1.00 P.)

[A] Best angle of climb.

[B] Best rate of climb.

[C] Best angle of glide.

[D] Best approach speed.

113 VNE means the speed: (1.00 P.)

[A] Never to be exceeded.

[B] For normal operating.

[C] Not achievable.

[D] Never to be used.

114 Which one of the following is not affected by a tail wind? (1.00 P.)

[A] the obstacle limited take-off mass.

[B] the field limited take-off mass.

[C] the take-off run.

[D] the climb limited take-off mass.

115 Given:
Dry Operating Mass= 29 800 kg
Maximum Take-Off Mass= 52 400 kg
Maximum Zero-Fuel Mass= 43 100 kg
Maximum Landing Mass= 46 700 kg
Trip fuel= 4 000 kg
Fuel quantity at brakes release= 8 000 kg
The maximum traffic load is: (1.00 P.)

[A] 12 900 kg

[B] 14 600 kg

[C] 13 300 kg

[D] 9 300 kg

116 AEO means: (1.00 P.)

[A] All engines operating.

[B] Aft electrical bay overcharged.

[C] All engines inoperative.

[D] All exits open.

117 Large rotorcraft are those of maximum weight of: (1.00 P.)

[A] 20,000 Ibs

[B] 9071 kgs

[C] 9072 Ibs

[D] 20,000 kgs

118 The total mass of an aircraft is 9000 kg. The centre of gravity (cg) position is at 2.0 m from the datum line. The aft limit for cg is at 2.1 m from the datum line. What mass of cargo must be shifted from the front cargo hold (at 0.8 m from the datum) to the aft hold (at 3.8 m), to move the cg to the aft limit? (1.00 P.)

[A] 300 kg

[B] 900 kg

[C] 30.0 kg

[D] 196 kg

119 Small rotorcraft are those of maximum weight of: (1.00 P.)

[A] 2570 Ibs

[B] 2750 kgs

[C] 10,000 Ibs

[D] 6000 Ibs

120 The main end-product of performance planning is: (1.00 P.)

[A] A range of speeds and heights.

[B] An ETA for the destination.

[C] A flight plan fuel.

[D] The maximum mass of the aircraft at different phases of flight.

121 Considering VR, which statement is correct? (1.00 P.)

[A] VR is the speed at which rotation should be initiated.

[B] VR is the lowest climb speed after engine failure.

[C] VR is the lowest speed for directional control in case of engine failure.

[D] In case of engine failure below VR the take-off should be aborted.

122 The "Density altitude" is: (1.00 P.)

[A] the altitude obtained by setting the subscale of an altimeter to QNH.

[B] the altitude in the standard atmosphere at which the prevailing density occurs.

[C] the height obtained by setting the subscale of an altimeter to QNE.

[D] the height in the standard atmosphere at which the prevailing density occurs.

123 The altitude, calculated by "Pressure altitude +/- 118,8 x Temperature Deviation from ISA" is: (1.00 P.)

[A] density altitude

[B] equivalent altitude

[C] elevation

[D] standard altitude

124 Define the term "Climb gradient". (1.00 P.)

[A] The gradient, calculated by "Rate of climb" divided by "Time".

[B] The ratio, in the same units, and expressed as a percentage of "Change in height" divided by "Horizontal distance travelled".

[C] The ratio, calculated by "Change in height" multiplied by "Time" (in seconds).

[D] "Rate of climb" in ft/min or m/s.

125 Assume:
Aircraft actual mass: 4750 kg
Centre of gravity at station: 115.8

What will be the new position of the centre of gravity if 100 kg is moved from the station 30 to station 120? (1.00 P.)

[A] Station 118.33

[B] Station 120.22

[C] Station 117.69

[D] Station 118.25

126 The ratio, in the same units, and expressed as a percentage of "Change in height" divided by "Horizontal distance travelled" means: (1.00 P.)

[A] Rate of climb

[B] Ratio of climb or descend

[C] Climb gradient

[D] Climb ratio

127 Which statement is correct? (1.00 P.)

[A] VR must not be less than 1.05 VMCA and not less than V1.

[B] VR must not be less than 1.1 VMCA and not less than V1.

[C] VR must not be less than 1.05 VMCA and not less than 1.1 V1.

[D] VR must not be less than VMCA and not less than 1.05 V1.

128 What does the abbreviation "VLE" mean? (1.00 P.)

[A] Maximum landing gear operating speed

[B] Maximum landing gear extended speed

[C] Maximum level speed

[D] Minimum level speed

129 Which of the following represents the minimum for V1? (1.00 P.)

[A] VMU

[B] VLOF

[C] VR

[D] VMCG

130 What is the abbreviation for the term "Maximum landing gear extended speed"? (1.00 P.)

[A] VA

[B] VNE

[C] VLE

[D] VLO

131 An aeroplane with a two wheel nose gear and four main wheels rests on the ground with a single nose wheel load of 500 kg and a single main wheel load of 6000 kg. The distance between the nose wheels and the main wheels is 10 meter. How far is the centre of gravity in front of the main wheels? (1.00 P.)

[A] 4 meter.

[B] 40 cm.

[C] 41.6 cm.

[D] 25 cm.

132 What does the abbreviation "VLO" mean? (1.00 P.)

[A] Maximum landing gear extended speed

[B] Maximum low level speed

[C] Minimum landing gear extended speed

[D] Maximum landing gear operating speed

133 What is the abbreviation for the term "Maximum landing gear operating speed"? (1.00 P.)

[A] VGO

[B] VLE

[C] VLG

[D] VLO

134 What does the abbreviation "VY" mean? (1.00 P.)

[A] Best approach speed

[B] Take-off decision speed

[C] Speed for best angle of climb

[D] Speed for best rate of climb

135 Considering only structural limitations, on very short legs with minimum take-off fuel, the traffic load is normally limited by: (1.00 P.)

[A] Maximum landing mass.

[B] Maximum take-off mass.

[C] Maximum zero fuel mass.

[D] Actual landing mass.

136 What is the abbreviation for the term "Speed for best rate of climb"? (1.00 P.)

[A] VLO

[B] Vx

[C] V2

[D] Vy

137 Which of the following represents the maximum value for V1 assuming max tyre speed and max brake energy speed are not limiting? (1.00 P.)

[A] VREF

[B] V2

[C] VR

[D] VMCA

138 "VTOSS" is the Take-off Safety Speed for: (1.00 P.)

[A] category A helicopters

[B] single-engine and multi-engine helicopters

[C] single-engine helicopters

[D] class 2 helicopters

139 During certification flight testing on a four engine turbojet aeroplane the actual take-off distances measured are:
3050 m with failure of the critical engine recognised at V1
2555 m with all engines operating and all other things being equal

The take-off distance adopted for the certification file is: (1.00 P.)

[A] 2938 m

[B] 3513 m

[C] 3050 m

[D] 2555 m

140 Considering only structural limitations, on long distance flights (at the aeroplane's maximum range), the traffic load is normally limited by: (1.00 P.)

[A] The maximum zero fuel mass.

[B] The maximum take-off mass.

[C] The maximum landing mass.

[D] The maximum zero fuel mass plus the take-off mass.

141 What is the abbreviation for the term "Take-off safety speed"? (1.00 P.)

[A] VTO

[B] VTOSS

[C] VY

[D] VX

142 What does the abbreviation "VNE" mean? (1.00 P.)

[A] Never exceed speed

[B] Normal endurance speed

[C] Minimum operating speed

[D] Maximum landing gear operating speed

143 What is the abbreviation for the term "Never exceed speed"? (1.00 P.)

[A] VLE

[B] VNX

[C] VNE

[D] VNO

144 The speed to fly for maximum range is: (1.00 P.)

[A] the speed, whichever the maximum range obtained for a given quantity of fuel at the lowest rate of fuel consumption, i.e. the lowest fuel flow per unit of time.

[B] the speed, whichever achieve the maximum range using a given quantity of fuel, an aircraft must consume the optimum fuel flow per unit of time.

[C] To fly for maximum range is in helicopter operations not used.

[D] the speed, whichever achieve the maximum range using a given quantity of fuel, an aircraft must consume the lowest possible amount of fuel for each nautical mile travelled over the ground.

145 The zero fuel mass of an aeroplane is always: (1.00 P.)

[A] the take-off mass minus the mass of take-off fuel.

[B] the maximum take-off mass minus the take-off fuel mass.

[C] the take-off mass minus the fuselage fuel mass.

[D] the take-off mass minus the wing fuel mass.

146 In the event of engine failure below V1, the first action to be taken by the pilot in order to decelerate the aeroplane is to: (1.00 P.)

[A] deploy airbrakes or spoilers.

[B] reduce the engine thrust.

[C] apply wheel brakes.

[D] reverse engine thrust.

147 The speed to fly for maximum endurance is: (1.00 P.)

[A] To fly for maximum endurance is in helicopter operations not used.

[B] the speed, whichever achieve the maximum endurance using given quantity of fuel, an aircraft must consume the optimum fuel flow for each nautical mile travelled over the ground.

[C] the speed, whichever achieve the maximum endurance using a given quantity of fuel, an aircraft must consume the lowest possible amount of fuel for each nautical mile travelled over the ground.

[D] the speed, whichever the maximum endurance obtained for a given quantity of fuel at the lowest rate of fuel consumption, i.e. the lowest fuel flow per unit of time.

148 If the antiskid system is inoperative, which of the following statements is true? (1.00 P.)

[A] It has no effect on the accelerate stop distance.

[B] The accelerate stop distance increases.

[C] The accelerate stop distance decreases.

[D] Take-off with anti-skid inoperative is never permitted.

149 Where is an official "Fuel flow chart" found? (1.00 P.)

[A] In the "Helicopter Flight Manual"

[B] In the "Operators Manual"

[C] In the "Type Certificate"

[D] In the "Maintenance Manual"

150 Given:
Maximum structural take-off mass= 146 900 kg
Maximum structural landing mass= 93 800 kg
Maximum zero fuel mass= 86 400 kg
Trip fuel= 27 500 kg
Block fuel= 35 500 kg
Engine starting and taxi fuel = 1 000 kg
The maximum take-off mass is equal to: (1.00 P.)

[A] 113 900 kg

[B] 120 300 kg

[C] 120 900 kg

[D] 121 300 kg

151 In which document is an official "Power required chart" to be found? (1.00 P.)

[A] In the "Helicopter Flight Manual"

[B] In the "Operators Manual"

[C] In the "Maintenance Manual"

[D] In the "Type Certificate"

152 What does the abbreviation "AEO" mean? (1.00 P.)

[A] All electrical consumers off

[B] All engines operating

[C] All engines "off"

[D] Advised emergency operations

153 What does the abbreviation "OEI" mean? (1.00 P.)

[A] Outboard electrical input

[B] Override electrical inverter

[C] One engine inoperative

[D] Out of engine limits

154 Given:
Aeroplane mass = 36 000 kg
Centre of gravity (cg) is located at station 17 m
What is the effect on cg location if you move 20 passengers (total mass = 1 600 kg) from station 16 to station 23? (1.00 P.)

[A] It moves aft by 3.22 m.

[B] It moves aft by 0.157 m.

[C] It moves forward by 0.157 m.

[D] It moves aft by 0.31 m.

155 In which of the following distances can the length of a stopway be included? (1.00 P.)

[A] In the one-engine failure case, take-off distance.

[B] In the all-engine take-off distance.

[C] In the accelerate stop distance available.

[D] In the take-off run available.

156 The "Maximum operating altitudes" of a certain Helicopter are laid down in: (1.00 P.)

[A] the Helicopter Flight Manual

[B] the ICAO Annex 2

[C] the AIP

[D] the Operators Manual

157 Define the term "Performance Class 1". (1.00 P.)

[A] Performance Class 1 operations are those with performance such that, in the event of failure of the critical power unit, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs.

[B] Performance Class 1 operations are those operations such that, in the event of a power unit failure at any time during the flight, a forced landing may be required in a multi-engine helicopter but will be required in a single engine helicopter.

[C] Performance Class 1 operations are those operations such that, in the event of critical power unit failure, performance is available to enable the helicopter to safely continue the flight, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

[D] Performance Class 1 helicopters means multi-engine helicopters based on a critical engine failure concept which assures performance capability for continued safe flight in the event of an engine failure.

158 Define the term "Performance Class 2". (1.00 P.)

[A] Performance Class 2 operations are those with performance such that, in the event of failure of the critical power unit, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs.

[B] Performance Class 2 helicopters means multi-engine helicopters based on a critical engine failure concept which assures performance capability for continued safe flight in the event of an engine failure.

[C] Performance Class 2 operations are those operations such that, in the event of critical power unit failure, performance is available to enable the helicopter to safely continue the flight, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

[D] Performance Class 2 operations are those operations such that, in the event of a power unit failure at any time during the flight, a forced landing may be required in a multi-engine helicopter but will be required in a single engine helicopter.

159 The loaded centre of gravity (cg) of an aeroplane is 713 mm aft of datum. The mean aerodynamic chord lies between station 524 mm aft and 1706 mm aft. The cg expressed as % MAC (mean aerodynamic chord) is: (1.00 P.)

[A] 16 %

[B] 60 %

[C] 10 %

[D] 41 %

160 Define the term "Performance Class 3". (1.00 P.)

[A] Performance Class 3 helicopters means multi-engine helicopters based on a critical engine failure concept which assures performance capability for continued safe flight in the event of an engine failure.

[B] Performance Class 3 operations are those operations such that, in the event of a power unit failure at any time during the flight, a forced landing may be required in a multi-engine helicopter but will be required in a single engine helicopter.

[C] Performance Class 3 operations are those with performance such that, in the event of failure of the critical power unit, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs.

[D] Performance Class 3 helicopters means single-engine or multi-engine helicopters which do not fully meet all class 2 standards. Class 3 helicopters have no guaranteed stay-up ability in the event of engine failure and unscheduled landing is assumed.

161 In a given configuration, mass and fuel on board, the endurance of a helicopter: (1.00 P.)

[A] depends on Altitude and wind conditions.

[B] depends on Groundspeed and Altitude.

[C] depends on Altitude and True Air Speed.

[D] depends on Altitude only.

162 Other factors remaining constant and not limiting, how does increasing pressure altitude affect allowable take-off mass? (1.00 P.)

[A] There is no effect on allowable take-off mass.

[B] Allowable take-off mass remains uninfluenced up to 5000 ft pressure altitude.

[C] Allowable take-off mass increases.

[D] Allowable take-off mass decreases.

163 If there is a tail wind, the climb limited Take Off Mass will: (1.00 P.)

[A] not be affected.

[B] increase in the flaps extended case.

[C] decrease.

[D] increase.

164 The "climb gradient" is defined as the ratio of (1.00 P.)

[A] the increase of altitude to distance over ground expressed as a percentage

[B] true airspeed to rate of climb

[C] rate of climb to true airspeed

[D] the increase of altitude to horizontal air distance expressed as a percentage

165 The take-off mass of an aeroplane is 117 000 kg, comprising a traffic load of 18 000 kg and fuel of 46 000 kg. What is the dry operating mass? (1.00 P.)

[A] 64 000 kg

[B] 71 000 kg

[C] 99 000 kg

[D] 53 000 kg

166 The speed for maximum endurance: (1.00 P.)

[A] can either be higher or lower than the speed for maximum specific range

[B] is always lower than the speed for maximum specific range

[C] is in any case identical with the speed for maximum specific range

[D] is always higher than the speed for maximum specific range

167 Maximum endurance (1.00 P.)

[A] will be achieved flying with minimum fuel consumption (kg/NM)

[B] is the same as maximum specific range

[C] is the same as maximum specific range with wind correction

[D] will be achieved by flying with minimum fuel flow (kg/h)

168 Which of the following sets of factors will increase the climb-limited Take Off Mass (every factor considered independently)? (1.00 P.)

[A] Low flap setting, high PA, low OAT.

[B] Low flap setting, low PA, low OAT.

[C] Low flap setting, high PA, high OAT.

[D] High flap setting, low PA, low OAT.

169 The density altitude: (1.00 P.)

[A] is used to establish a minimum clearance of 2000 feet over mountains.

[B] is used to determine a helicopters performance.

[C] is always equal to the pressure altitude.

[D] is used to calculate the transition level.

170 A location in the aircraft which is identified by a number designating its distance from the datum is known as: (1.00 P.)

[A] Moment.

[B] Index.

[C] MAC.

[D] Station.

171 A head wind will: (1.00 P.)

[A] shorten the time to a given altitude.

[B] increase the climb flight path angle.

[C] increase the rate of climb.

[D] increase the angle of climb.

172 What is the effect of tail wind on the time to climb to a given altitude? (1.00 P.)

[A] The time to climb increases

[B] The effect on the time to climb will depend on the helicopter type

[C] The time to climb decreases

[D] The time to climb does not change

173 The maximum indicated air speed of a helicopter in level flight is reached: (1.00 P.)

[A] at the lowest possible altitude

[B] at the service ceiling

[C] at the practical ceiling

[D] at the optimum cruise altitude

174 The requirements with regard to take-off flight path and the climb segments are only specified for: (1.00 P.)

[A] 2 engine aeroplane.

[B] the failure of the critical engine on a multi-engines aeroplane.

[C] the failure of two engines on a multi-engine aeroplane.

[D] the failure of any engine on a multi-engine aeroplane.

175 The mass of an aircraft is 1950 kg. If 450 kg is added to a cargo hold 1.75 metres from the loaded centre of gravity (cg). The loaded cg will move: (1.00 P.)

[A] 30 cm.

[B] 34 cm.

[C] 40 cm.

[D] 33 cm.

176 How do the best angle of climb speed and best rate of climb speed vary with increasing altitude? (1.00 P.)

[A] Both decrease

[B] Best angle of climb increases while best rate of climb decreases

[C] Best angle of climb decreases while best rate of climb increases

[D] Both increase

177 Density altitude is: (1.00 P.)

[A] pressure altitude corrected for "non standard" temperature.

[B] height above the surface.

[C] altitude read directly from the altimeter.

[D] altitude referenced to the standard datum.

178 The never exceed speed (VNE) of a helicopter, as specified in the flight manual: (1.00 P.)

[A] only applies at Maximum Certificated Mass.

[B] is not attainable during a dive without engine power.

[C] is attainable with full engine power in level flight.

[D] may not be exceeded under any circumstances.

179 The Dry Operating Mass includes: (1.00 P.)

[A] unusable fuel and reserve fuel.

[B] fuel and passengers baggage and cargo.

[C] passengers baggage and cargo.

[D] crew and crew baggage, catering, removable passenger service equipment, potable water and lavatory chemicals.

180 The absolute ceiling of a helicopter as specified in its performance data, is the altitude at which the helicopter is: (1.00 P.)

[A] just able to climb.

[B] no longer able to climb at all.

[C] still able to climb at a rate of 500 ft/min.

[D] still able to climb at a rate of 0,5 m/sec.

181 Which of the following groups of conditions are the most favourable for take-off? (1.00 P.)

[A] High airfield elevation, low temperature, high atmospheric pressure.

[B] Low airfield elevation, high temperature, low air density.

[C] High airfield elevation , low humidity, high temperature, low atmospheric pressure.

[D] Low airfield elevation, low humidity, low temperature, high atmospheric pressure.

182 At which minimum height will the second climb segment end? (1.00 P.)

[A] 35 ft above ground.

[B] When gear retraction is completed.

[C] 1500 ft above field elevation.

[D] 400 ft above field elevation.

183 Which of the following factors has the greatest effect on take-off power? (1.00 P.)

[A] Light precipitation

[B] Humidity

[C] Airfield elevation

[D] Density Altitude

184 A head wind will: (1.00 P.)

[A] increase the rate of climb.

[B] increase the angle of climb.

[C] increase the climb flight path angle.

[D] shorten the time of climb.

185 Why is VNE stated as an operating limitation?
1. Aerodynamic limitation
2. Engine performance limitation
3. Noise level related limitation.
4. Structural limitation.
5. ATC limitation.

Which of the following groups all the correct answers? (1.00 P.)

[A] 2 only

[B] 1 and 4

[C] 2 and 4

[D] 3 and 5

186 Which is true of the aircraft basic empty mass? (1.00 P.)

[A] It is dry operating mass minus traffic load.

[B] It is a component of dry operating mass.

[C] It is dry operating mass minus fuel load.

[D] It is the actual take-off mass, less traffic load.

187 What effect does temperature have on the performance limited take-off mass? (1.00 P.)

[A] Rising temperatures will permit a higher performance limited take-off-mass.

[B] A change in temperature does not affect the performance limited take-off mass.

[C] Falling temperatures will require a lower performance limited take-off mass.

[D] Rising temperatures will lower the performance limited take-off mass.

188 The abbreviation VLE means: (1.00 P.)

[A] maximum landing gear extended speed

[B] maximum speed to retract the landing gear

[C] maximum speed to extend the landing gear

[D] maximum speed to operate the landing gear

189 Assuming that the required lift exists, which forces determine an aeroplane's angle of climb? (1.00 P.)

[A] Weight and drag only.

[B] Thrust and drag only.

[C] Weight and thrust only.

[D] Weight, drag and thrust.

190 In mass and balance calculations the "index" is: (1.00 P.)

[A] is a figure without unit of measurement which represents a moment.

[B] the range of moments the centre of gravity (cg) can have without making the aeroplane unsafe to fly.

[C] a location in the aeroplane identified by a number.

[D] an imaginary vertical plane or line from which all measurements are taken.

191 The abbreviation VLO means: (1.00 P.)

[A] maximum speed with landing gear extended

[B] maximum landing gear operating speed

[C] maximum lift-off speed

[D] maximum operating limit speed

192 The abbreviation Vy means: (1.00 P.)

[A] take-off safety speed

[B] speed for best angle of climb

[C] steady initial climb speed

[D] speed for best rate of climb

193 Loads must be adequately secured in order to: (1.00 P.)

[A] avoid any centre of gravity (cg) movement during flight.

[B] prevent excessive 'g'-loading during the landing flare.

[C] allow steep turns.

[D] avoid unplanned centre of gravity (cg) movement and aircraft damage.

194 The abbreviation VTOSS means: (1.00 P.)

[A] threshold operating safety speed

[B] stall speed

[C] take-off safety speed for a Category A rotorcraft

[D] steady flight speed

195 The abbreviation VNE means: (1.00 P.)

[A] normal extension speed

[B] maximum speed in level flight

[C] never exceed speed

[D] normal speed with landing gear extended

196 How does the best angle of climb and best rate of climb vary with increasing altitude for an aeroplane with a normal aspirated piston engine? (1.00 P.)

[A] Both decrease.

[B] Both increase.

[C] Best angle of climb decreases while best rate of climb increases.

[D] Best angle of climb increases while best rate of climb decreases.

197 The effect of wind on Rate of Climb (ROC) will be: (1.00 P.)

[A] The wind effect on ROC is unpredictable

[B] Nil

[C] Tailwind will increase the ROC

[D] Headwind will increase the ROC

198 Traffic load is the: (1.00 P.)

[A] Dry Operating Mass minus the variable load.

[B] Dry Operating Mass minus the disposable load.

[C] Take-off Mass minus Zero Fuel Mass.

[D] Zero Fuel Mass minus Dry Operating Mass.

199 The effect of wind on Angle of Climb Path will be: (1.00 P.)

[A] Head- and Tailwind will decrease the Angle of Climb Path

[B] The wind effect on Angle of Climb Path is unpredictable

[C] Headwind will increase the Angle of Climb Path

[D] Nil

200 The speed for maximum rate of climb: (1.00 P.)

[A] may be higher or lower than the speed for best angle of climb depending on helicopter type.

[B] lower than the speed for the best angle of climb.

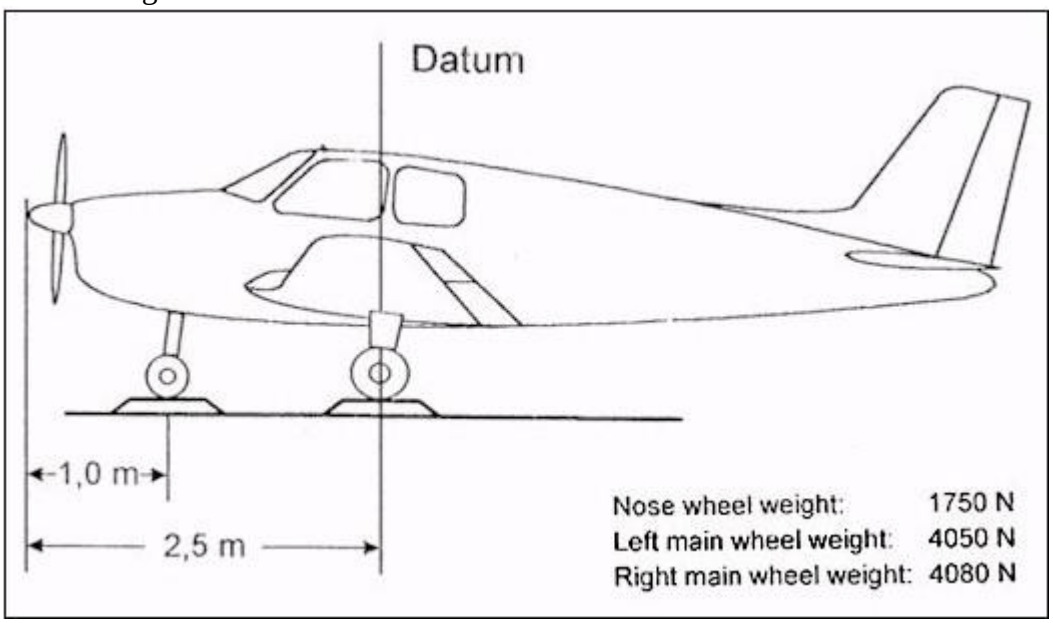
[C] will be higher than the speed for best angle of climb.

[D] will be the same as the speed for best angle of climb under any circumstances.

Anlagen zu den Aufgaben

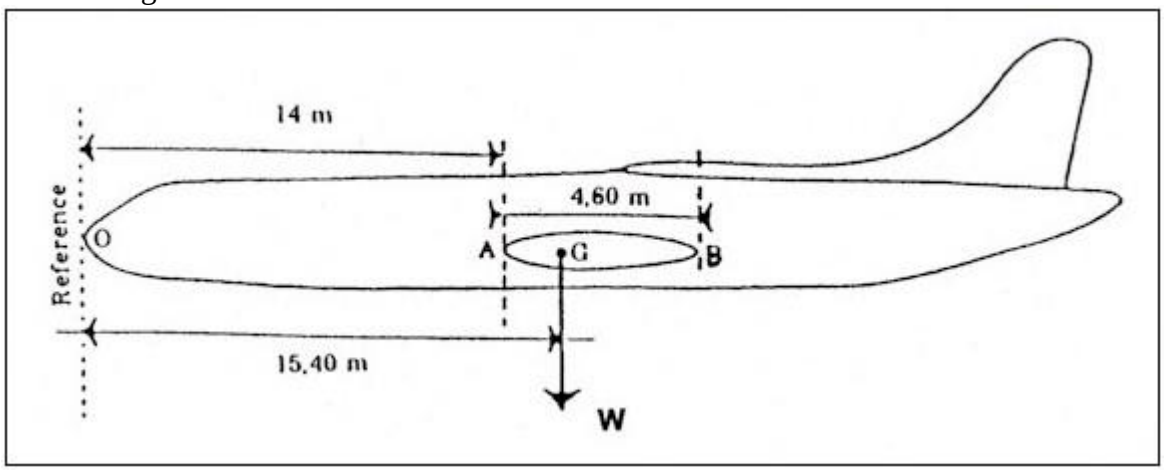
Anlage 1 zu Aufgabe 80

Titel: Anlage 1



Anlage 2 zu Aufgabe 108

Titel: Anlage 1



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

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70.	**A**	**B**	**C**	**D**	**71.**	**A**	**B**	**C**	**D**	**72.**	**A**	**B**	**C**	**D**
73.	**A**	**B**	**C**	**D**	**74.**	**A**	**B**	**C**	**D**	**75.**	**A**	**B**	**C**	**D**
76.	**A**	**B**	**C**	**D**	**77.**	**A**	**B**	**C**	**D**	**78.**	**A**	**B**	**C**	**D**
79.	**A**	**B**	**C**	**D**	**80.**	**A**	**B**	**C**	**D**	**81.**	**A**	**B**	**C**	**D**
82.	**A**	**B**	**C**	**D**	**83.**	**A**	**B**	**C**	**D**	**84.**	**A**	**B**	**C**	**D**
85.	**A**	**B**	**C**	**D**	**86.**	**A**	**B**	**C**	**D**	**87.**	**A**	**B**	**C**	**D**
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106.	**A**	**B**	**C**	**D**	**107.**	**A**	**B**	**C**	**D**	**108.**	**A**	**B**	**C**	**D**
109.	**A**	**B**	**C**	**D**	**110.**	**A**	**B**	**C**	**D**	**111.**	**A**	**B**	**C**	**D**
112.	**A**	**B**	**C**	**D**	**113.**	**A**	**B**	**C**	**D**	**114.**	**A**	**B**	**C**	**D**
115.	**A**	**B**	**C**	**D**	**116.**	**A**	**B**	**C**	**D**	**117.**	**A**	**B**	**C**	**D**
118.	**A**	**B**	**C**	**D**	**119.**	**A**	**B**	**C**	**D**	**120.**	**A**	**B**	**C**	**D**
121.	**A**	**B**	**C**	**D**	**122.**	**A**	**B**	**C**	**D**	**123.**	**A**	**B**	**C**	**D**
124.	**A**	**B**	**C**	**D**	**125.**	**A**	**B**	**C**	**D**	**126.**	**A**	**B**	**C**	**D**
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130.	**A**	**B**	**C**	**D**	**131.**	**A**	**B**	**C**	**D**	**132.**	**A**	**B**	**C**	**D**

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133.	A	B	C	D	134.	A	B	C	D	135.	A	B	C	D
136.	A	B	C	D	137.	A	B	C	D	138.	A	B	C	D
139.	A	B	C	D	140.	A	B	C	D	141.	A	B	C	D
142.	A	B	C	D	143.	A	B	C	D	144.	A	B	C	D
145.	A	B	C	D	146.	A	B	C	D	147.	A	B	C	D
148.	A	B	C	D	149.	A	B	C	D	150.	A	B	C	D
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157.	A	B	C	D	158.	A	B	C	D	159.	A	B	C	D
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169.	A	B	C	D	170.	A	B	C	D	171.	A	B	C	D
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175.	A	B	C	D	176.	A	B	C	D	177.	A	B	C	D
178.	A	B	C	D	179.	A	B	C	D	180.	A	B	C	D
181.	A	B	C	D	182.	A	B	C	D	183.	A	B	C	D
184.	A	B	C	D	185.	A	B	C	D	186.	A	B	C	D
187.	A	B	C	D	188.	A	B	C	D	189.	A	B	C	D
190.	A	B	C	D	191.	A	B	C	D	192.	A	B	C	D
193.	A	B	C	D	194.	A	B	C	D	195.	A	B	C	D
196.	A	B	C	D	197.	A	B	C	D	198.	A	B	C	D

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199.	**A**	**B**	**C**	**D**		**200.**	**A**	**B**	**C**	**D**

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

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67.	**A**				**68.**			**C**		**69.**				**D**
70.				**D**	**71.**			**C**		**72.**	**A**			
73.		**B**			**74.**	**A**				**75.**				**D**
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94.	**A**				**95.**	**A**				**96.**		**B**		
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136.				**D**	**137.**			**C**		**138.**	**A**			
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142.	**A**				**143.**			**C**		**144.**				**D**
145.	**A**				**146.**		**B**			**147.**				**D**
148.		**B**			**149.**	**A**				**150.**			**C**	
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154.				**D**	**155.**			**C**		**156.**	**A**			
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184.			**C**		**185.**		**B**			**186.**		**B**		
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190.	**A**				**191.**		**B**			**192.**				**D**
193.				**D**	**194.**			**C**		**195.**			**C**	
196.	**A**				**197.**		**B**			**198.**				**D**

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