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Part-FCL Question Bank

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(Excerpt)

30 – Meteorology

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- 1 What clouds and weather may result from an humid and instable air mass, that is pushed against a chain of mountains by the predominant wind and forced to rise? (1,00 P.)**
- ☒ Embedded CB with thunderstorms and showers of hail and/or rain.
 - ☐ Thin Altostratus and Cirrostratus clouds with light and steady precipitation.
 - ☐ Overcast low stratus (high fog) with no precipitation.
 - ☐ Smooth, unstructured NS cloud with light drizzle or snow (during winter).
- 2 What type of fog emerges if humid and almost saturated air, is forced to rise upslope of hills or shallow mountains by the prevailing wind? (1,00 P.)**
- ☒ Orographic fog
 - ☐ Steaming fog
 - ☐ Radiation fog
 - ☐ Advection fog
- 3 What situation is called "over-development" in a weather report? (1,00 P.)**
- ☒ Vertical development of Cumulus clouds to rain showers
 - ☐ Widespreading of Cumulus clouds below an inversion layer
 - ☐ Change from blue thermals to cloudy thermals during the afternoon
 - ☐ Development of a thermal low to a storm depression
- 4 What is the gas composition of "air"? (1,00 P.)**
- ☐ Oxygen 21 %
Water vapour 78 %
Noble gases / carbon dioxide 1 %
 - ☐ Oxygen 78 %
Water vapour 21 %
Nitrogen 1 %
 - ☐ Nitrogen 21 %
Oxygen 78 %
Noble gases / carbon dioxide 1 %
 - ☒ Oxygen 21 %
Nitrogen 78 %
Noble gases / carbon dioxide 1 %
- 5 Weather phenomena are most common to be found in which atmospheric layer? (1,00 P.)**
- ☐ Stratosphere
 - ☐ Tropopause
 - ☐ Thermosphere
 - ☒ Troposphere

- 6 What is the mass of a "cube of air" with the edges 1 m long, at MSL according ISA? (1,00 P.)**
- ☒ 1,225 kg
 - ☐ 0,01225 kg
 - ☐ 0,1225 kg
 - ☐ 12,25 kg
- 7 At what rate does the temperature change with increasing height according to ISA (ICAO Standard Atmosphere) within the troposphere? (1,00 P.)**
- ☒ Decreases by 2° C / 1000 ft
 - ☐ Increases by 2° C / 1000 ft
 - ☐ Decreases by 2° C / 100 m
 - ☐ Increases by 2° C / 100 m
- 8 What is the mean height of the tropopause according to ISA (ICAO Standard Atmosphere)? (1,00 P.)**
- ☐ 18000 ft
 - ☐ 11000 ft
 - ☒ 11000 m
 - ☐ 36000 m
- 9 The term "tropopause" is defined as... (1,00 P.)**
- ☐ the layer above the troposphere showing an increasing temperature.
 - ☐ the boundary area between the mesosphere and the stratosphere.
 - ☒ the boundary area between the troposphere and the stratosphere.
 - ☐ the height above which the temperature starts to decrease.
- 10 Temperatures will be given by meteorological aviation services in Europe in which unit? (1,00 P.)**
- ☒ Degrees Centigrade (° C)
 - ☐ Kelvin
 - ☐ Gpdam
 - ☐ Degrees Fahrenheit
- 11 What is meant by "inversion layer"? (1,00 P.)**
- ☐ An atmospheric layer where temperature decreases with increasing height
 - ☐ A boundary area between two other layers within the atmosphere
 - ☐ An atmospheric layer with constant temperature with increasing height
 - ☒ An atmospheric layer where temperature increases with increasing height

12 What is meant by "isothermal layer"? (1,00 P.)

- ☐ An atmospheric layer where temperature increases with increasing height
- ☐ An atmospheric layer where temperature decreases with increasing height
- ☐ A boundary area between two other layers within the atmosphere
- ☒ An atmospheric layer with constant temperature with increasing height

13 The temperature lapse rate with increasing height within the troposphere according ISA is... (1,00 P.)

- ☒ 0,65° C / 100 m.
- ☐ 3° C / 100 m.
- ☐ 1° C / 100 m.
- ☐ 0,6° C / 100 m.

14 Which process may result in an inversion layer at about 5000 ft (1500 m) height? (1,00 P.)

- ☐ Intensive sunlight insolation during a warm summer day
- ☒ Widespread descending air within a high pressure area
- ☐ Ground cooling by radiation during the night
- ☐ Advection of cool air in the upper troposphere

15 An inversion layer close to the ground can be caused by... (1,00 P.)

- ☒ ground cooling during the night.
- ☐ large-scale lifting of air.
- ☐ intensifying and gusting winds.
- ☐ thickening of clouds in medium layers.

16 What is the ISA standard pressure at FL 180 (5500 m)? (1,00 P.)

- ☐ 250 hPa
- ☐ 300 hPa
- ☐ 1013.25 hPa
- ☒ 500 hPa

17 The pressure which is measured at a ground station and reduced to mean sea level (MSL)

by means of the actual atmospheric conditions is called... (1,00 P.)

- ☐ QNH.
- ☐ QNE.
- ☐ QFE.
- ☒ QFF.

18 Which processes result in decreasing air density? (1,00 P.)

- ☐ Decreasing temperature, increasing pressure
- ☒ Increasing temperature, decreasing pressure
- ☐ Increasing temperature, increasing pressure
- ☐ Decreasing temperature, decreasing pressure

19 The pressure at MSL in ISA conditions is... (1,00 P.)

- ☐ 113.25 hPa.
- ☐ 15 hPa.
- ☒ 1013.25 hPa.
- ☐ 1123 hPa.

20 The height of the tropopause of the International Standard Atmosphere (ISA) is at... (1,00 P.)

- ☐ 5500 ft.
- ☐ 11000 ft.
- ☒ 36000 ft.
- ☐ 48000 ft.

21 The barometric altimeter indicates height above... (1,00 P.)

- ☒ a selected reference pressure level.
- ☐ mean sea level.
- ☐ standard pressure 1013.25 hPa.
- ☐ ground.

22 The altimeter can be checked on the ground by setting... (1,00 P.)

- ☐ QFE and comparing the indication with the airfield elevation.
- ☒ QNH and comparing the indication with the airfield elevation.
- ☐ QNE and checking that the indication shows zero on the ground.
- ☐ QFF and comparing the indication with the airfield elevation.

23 The barometric altimeter with QFE setting indicates... (1,00 P.)

- ☒ height above the pressure level at airfield elevation.
- ☐ true altitude above MSL.
- ☐ height above MSL.
- ☐ height above standard pressure 1013.25 hPa.

24 The barometric altimeter with QNH setting indicates... (1,00 P.)

- ☐ height above standard pressure 1013.25 hPa.
- ☐ height above the pressure level at airfield elevation.
- ☐ true altitude above MSL.
- ☒ height above MSL.

25 Given the following information, what is the true altitude? (rounded to the nearest 50 ft)**QNH: 983 hPa****Altitude: FL 85****Outside Air Temperature: ISA - 10° (1,00 P.)**

- ☐ 7900 ft
- ☐ 9400 ft
- ☒ 7300 ft
- ☐ 7600 ft

26 How can wind speed and wind direction be derived from surface weather charts? (1,00 P.)

- ☒ By alignment and distance of isobaric lines
- ☐ By alignment and distance of hypsometric lines
- ☐ By alignment of lines of warm- and cold fronts.
- ☐ By annotations from the text part of the chart

27 Which force causes "wind"? (1,00 P.)

- ☐ Centrifugal force
- ☐ Thermal force
- ☐ Coriolis force
- ☒ Pressure gradient force

28 Above the friction layer, with a prevailing pressure gradient, the wind direction is... (1,00 P.)

- ☐ perpendicular to the isohypses.
- ☐ at an angle of 30° to the isobars towards low pressure.
- ☒ parallel to the isobars.
- ☐ perpendicular to the isobars.

29 Which of the stated surfaces will reduce the wind speed most due to ground friction? (1,00 P.)

- ☐ Flat land, deserted land, no vegetation
- ☐ Oceanic areas
- ☒ Mountainous areas, vegetation cover
- ☐ Flat land, lots of vegetation cover

30 The movement of air flowing together is called... (1,00 P.)

- ☒ convergence.
- ☐ divergence.
- ☐ soncordence.
- ☐ subsidence.

31 The movement of air flowing apart is called... (1,00 P.)

- ☐ convergence.
- ☐ concordence.
- ☒ divergence.
- ☐ subsidence.

32 What weather development will result from convergence at ground level? (1,00 P.)

- ☐ Descending air and cloud formation
- ☐ Ascending air and cloud dissipation
- ☐ Descending air and cloud dissipation
- ☒ Ascending air and cloud formation

33 When air masses meet each other head on, how is this referred to and what air movements will follow? (1,00 P.)

- ☐ Convergence resulting in sinking air
- ☐ Divergence resulting in sinking air
- ☒ Convergence resulting in air being lifted
- ☐ Divergence resulting in air being lifted

34 What are the air masses that Central Europe is mainly influenced by? (1,00 P.)

- ☐ Arctic and polar cold air
- ☒ Polar cold air and tropical warm air
- ☐ Equatorial and tropical warm air
- ☐ Tropical and arctic cold air

35 With regard to global circulation within the atmosphere, where does polar cold air meets subtropical warm air? (1,00 P.)

- ☐ At the equator
- ☐ At the geographic poles
- ☐ At the subtropical high pressure belt
- ☒ At the polar front

36 Winds blowing uphill are defined as... (1,00 P.)

- ☐ katabatic winds.
- ☒ anabatic winds.
- ☐ convergent winds.
- ☐ subsident winds.

37 Winds blowing downhill are defined as... (1,00 P.)

- ☐ anabatic winds.
- ☒ katabatic winds.
- ☐ convergent winds.
- ☐ subsident winds.

38 Air descending behind a mountain range is defined as... (1,00 P.)

- ☒ katabatic wind.
- ☐ convergent wind.
- ☐ anabatic wind.
- ☐ divergent wind.

39 "Foehn" conditions usually develop with... (1,00 P.)

- ☐ instability, widespread air blown against a mountain ridge.
- ☒ stability, widespread air blown against a mountain ridge.
- ☐ instability, high pressure area with calm wind.
- ☐ stability, high pressure area with calm wind.

40 What type of turbulence is typically found close to the ground on the lee side during Foehn conditions? (1,00 P.)

- ☐ Inversion turbulence
- ☒ Turbulence in rotors
- ☐ Clear-air turbulence (CAT)
- ☐ Thermal turbulence

41 Light turbulence always has to be expected... (1,00 P.)

- ☐ above cumulus clouds due to thermal convection.
- ☐ below stratiform clouds in medium layers.
- ☐ when entering inversions.
- ☒ below cumulus clouds due to thermal convection.

- 42 Moderate to severe turbulence has to be expected... (1,00 P.)**
- ☐ with the appearance of extended low stratus clouds (high fog).
 - ☐ overhead unbroken cloud layers.
 - ☐ below thick cloud layers on the windward side of a mountain range.
 - ☒ on the lee side of a mountain range when rotor clouds are present.
- 43 Which answer contains every state of water found in the atmosphere? (1,00 P.)**
- ☐ Liquid and solid
 - ☒ Liquid, solid, and gaseous
 - ☐ Gaseous and liquid
 - ☐ Liquid
- 44 How do dew point and relative humidity change with decreasing temperature? (1,00 P.)**
- ☐ Dew point remains constant, relative humidity decreases
 - ☐ Dew point decreases, relative humidity increases
 - ☐ Dew point increases, relative humidity decreases
 - ☒ Dew point remains constant, relative humidity increases
- 45 How do spread and relative humidity change with increasing temperature? (1,00 P.)**
- ☒ Spread increases, relative humidity decreases
 - ☐ Spread remains constant, relative humidity decreases
 - ☐ Spread increases, relative humidity increases
 - ☐ Spread remains constant, relative humidity increases
- 46 The "spread" is defined as... (1,00 P.)**
- ☐ relation of actual to maximum possible humidity of air.
 - ☐ maximum amount of water vapour that can be contained in air.
 - ☐ difference between dew point and condensation point.
 - ☒ difference between actual temperature and dew point.
- 47 With other factors remaining constant, decreasing temperature results in... (1,00 P.)**
- ☐ decreasing spread and decreasing relative humidity.
 - ☐ increasing spread and decreasing relative humidity.
 - ☐ increasing spread and increasing relative humidity.
 - ☒ decreasing spread and increasing relative humidity.

48 What process causes latent heat being released into the upper troposphere? (1,00 P.)

- ☐ Descending air across widespread areas
- ☐ Stabilisation of inflowing air masses
- ☒ Cloud forming due to condensation
- ☐ Evaporation over widespread water areas

49 The saturated adiabatic lapse rate is... (1,00 P.)

- ☒ lower than the dry adiabatic lapse rate.
- ☐ proportional to the dry adiabatic lapse rate.
- ☐ higher than the dry adiabatic lapse rate.
- ☐ equal to the dry adiabatic lapse rate.

50 The dry adiabatic lapse rate has a value of... (1,00 P.)

- ☒ 1,0° C / 100 m.
- ☐ 2° / 1000 ft.
- ☐ 0,6° C / 100 m.
- ☐ 0,65° C / 100 m.

51 The saturated adiabatic lapse rate should be assumed with a mean value of: (1,00 P.)

- ☐ 1,0° C / 100 m.
- ☐ 0° C / 100 m.
- ☒ 0,6° C / 100 m.
- ☐ 2° C / 1000 ft.

52 What weather conditions may be expected during conditionally unstable conditions? (1,00 P.)

- ☐ Layered clouds up to high levels, prolonged rain or snow
- ☐ Shallow cumulus clouds with base at medium levels
- ☐ Sky clear of clouds, sunshine, low winds
- ☒ Towering cumulus, isolated showers of rain or thunderstorms

53 Which conditions are likely for the formation of advection fog? (1,00 P.)

- ☐ Cold, humid air moves over a warm ocean
- ☒ Warm, humid air moves over a cold surface
- ☐ Warm, humid air cools during a cloudy night
- ☐ Humidity evaporates from warm, humid ground into cold air

54 Clouds are basically distinguished by what types? (1,00 P.)

- ☐ Stratiform and ice clouds
- ☐ Layered and lifted clouds
- ☒ Cumulus and stratiform clouds
- ☐ Thunderstorm and shower clouds

55 Clouds in high layers are referred to as... (1,00 P.)

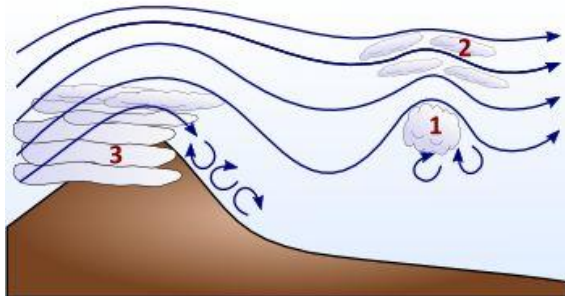
- ☐ Nimbo-.
- ☐ Strato-.
- ☐ Alto-.
- ☒ Cirro-.

56 What weather phenomenon designated by "2" has to be expected on the lee side during "Foehn" conditions?

See figure (MET-001). (1,00 P.)

Siehe Anlage 1

- ☐ Altocumulus Castellanus
- ☐ Nimbostratus
- ☐ Cumulonimbus
- ☒ Altocumulus lenticularis



MET-001

57 What cloud type does the picture show?

See figure (MET-002). (1,00 P.)

Siehe Anlage 2

- ☐ Stratus
- ☒ Cumulus
- ☐ Altus
- ☐ Cirrus



58 What cloud type does the picture show?

See figure (MET-004). (1,00 P.)

Siehe Anlage 3

- ☐ Altocumulus
- ☐ Cumulus
- ☐ Stratus
- ☒ Cirrus



59 What factor may affect the top of cumulus clouds? (1,00 P.)

- ☐ Relative humidity
- ☐ The spread
- ☒ The presence of an inversion layer
- ☐ The absolute humidity

60 What factors may indicate a tendency to fog formation? (1,00 P.)

- ☐ Low pressure, increasing temperature
- ☒ Low spread, decreasing temperature
- ☐ Low spread, increasing temperature
- ☐ Strong winds, decreasing temperature

61 What condition may prevent the formation of "radiation fog"? (1,00 P.)

- ☒ Overcast cloud cover
- ☐ Calm wind
- ☐ Low spread
- ☐ Clear night, no clouds

62 What process results in the formation of "advection fog"? (1,00 P.)

- ☐ Cold, moist air is being moved across warm ground areas
- ☒ Warm, moist air is moved across cold ground areas
- ☐ Cold, moist air mixes with warm, moist air
- ☐ Prolonged radiation during nights clear of clouds

63 What process results in the formation of "orographic fog" ("hill fog")? (1,00 P.)

- ☐ Prolonged radiation during nights clear of clouds
- ☒ Warm, moist air is moved across a hill or a mountain range
- ☐ Cold, moist air mixes with warm, moist air
- ☐ Evaporation from warm, moist ground area into very cold air

64 What factors are required for the formation of precipitation in clouds? (1,00 P.)

- ☐ High humidity and high temperatures
- ☐ The presence of an inversion layer
- ☐ Calm winds and intensive sunlight insolation
- ☒ Moderate to strong updrafts

65 The formation of medium to large precipitation particles requires... (1,00 P.)

- ☐ a high cloud base.
- ☐ strong wind.
- ☐ an inversion layer.
- ☒ strong updrafts.

66 Which type of cloud is associated with prolonged rain? (1,00 P.)

- ☐ Cumulonimbus
- ☐ Cirrostratus
- ☒ Nimbostratus
- ☐ Altocumulus

67 Regarding the type of cloud, precipitation is classified as... (1,00 P.)

- ☐ light and heavy precipitation.
- ☐ showers of snow and rain.
- ☐ prolonged rain and continuous rain.
- ☒ rain and showers of rain.

68 How is an air mass described when moving to Central Europe via the Russian continent during winter? (1,00 P.)

- ☐ Maritime tropical air
- ☐ Continental tropical air
- ☒ Continental polar air
- ☐ Maritime polar air

69 The character of an air mass is given by what properties? (1,00 P.)

- ☐ Temperatures at origin and present region
- ☐ Wind speed and tropopause height
- ☒ Region of origin and track during movement
- ☐ Environmental lapse rate at origin

70 The symbol labeled (1) as shown in the picture is a / an...

**See figure (MET-005)
(1,00 P.)**

Siehe Anlage 4

- ☐ front aloft.
- ☐ occlusion.
- ☐ warm front.
- ☒ cold front.

71 The symbol labeled (2) as shown in the picture is a / an...

See figure (MET-005) (1,00 P.)

Siehe Anlage 4

- ☐ front aloft.
- ☐ cold front.
- ☒ warm front.
- ☐ occlusion.

72 The symbol labeled (3) as shown in the picture is a / an...

See figure (MET-005) (1,00 P.)

Siehe Anlage 4

- ☐ front aloft.
- ☐ warm front.
- ☐ cold front.
- ☒ occlusion.

73 What cloud sequence can typically be observed during the passage of a warm front? (1,00 P.)

- ☐ In coastal areas during daytime wind from the coast and forming of cumulus clouds, dissipation of clouds during evening and night
- ☐ Wind becoming calm, dissipation of clouds and warming during summer; formation of extended high fog layers during winter
- ☐ Squall line with showers of rain and thunderstorms (Cb), gusting wind followed by cumulus clouds with isolated showers of rain
- ☒ Cirrus, thickening altostratus and altocumulus clouds, lowering cloud base with rain, nimbostratus

74 What clouds and weather can typically be observed during the passage of a cold front? (1,00 P.)

- ☐ In coastal areas during daytime wind from the coast and forming of cumulus clouds, dissipation of clouds during evening and night
- ☒ Strongly developed cumulus clouds (Cb) with showers of rain and thunderstorms, gusting wind followed by cumulus clouds with isolated showers of rain
- ☐ Cirrus, thickening altostratus and altocumulus clouds, lowering cloud base with rain, nimbostratus
- ☐ Wind becoming calm, dissipation of clouds and warming during summer; formation of extended high fog layers during winter

- 75 What visual flight conditions can be expected within the warm sector of a polar front low during summer time? (1,00 P.)**
- ☐ Visibility less than 1000 m, cloud-covered ground
 - ☐ Good visibility, some isolated high clouds
 - ☒ Moderate to good visibility, scattered clouds
 - ☐ Moderate visibility, heavy showers and thunderstorms
- 76 What visual flight conditions can be expected after the passage of a cold front? (1,00 P.)**
- ☐ Scattered cloud layers, visibility more than 5 km, formation of shallow cumulus clouds
 - ☒ Good visibility, formation of cumulus clouds with showers of rain or snow
 - ☐ Medium visibility with lowering cloud bases, onset of prolonged precipitation
 - ☐ Poor visibility, formation of overcast or ground-covering stratus clouds, snow
- 77 A boundary between a cold polar air mass and a warm subtropical air mass showing no horizontal displacement is called... (1,00 P.)**
- ☐ cold front.
 - ☐ warm front.
 - ☐ occluded front.
 - ☒ stationary front.
- 78 What is the usual direction of movement of a polar front low? (1,00 P.)**
- ☐ To the northwest during winter, to the southwest during summer
 - ☐ To the northeast during winter, to the southeast during summer
 - ☐ Parallel to the warm front line to the south
 - ☒ Parallel to the the warm-sector isobars
- 79 What pressure pattern can be observed during the passage of a polar front low? (1,00 P.)**
- ☐ Rising pressure in front of the warm front, constant pressure within the warm sector, rising pressure behind the cold front
 - ☒ Falling pressure in front of the warm front, constant pressure within the warm sector, rising pressure behind the cold front
 - ☐ Falling pressure in front of the warm front, constant pressure within the warm sector, falling pressure behind the cold front
 - ☐ Rising pressure in front of the warm front, rising pressure within the warm sector, falling pressure behind the cold front

80 What pressure pattern can be observed when a cold front is passing? (1,00 P.)

- ☐ Continually decreasing pressure
- ☒ Shortly decreasing, thereafter increasing pressure
- ☐ Continually increasing pressure
- ☐ Constant pressure pattern

81 What change of wind direction can be expected during the passage of a polar front low in Central Europe? (1,00 P.)

- ☐ Backing wind during passage of the warm front, veering wind during passage of the cold front
- ☐ Backing wind during passage of the warm front, backing wind during passage of the cold front
- ☒ Veering wind during passage of the warm front, veering wind during passage of the cold front
- ☐ Veering wind during passage of the warm front, backing wind during passage of the cold front

82 Extensive high pressure areas can be found throughout the year ... (1,00 P.)

- ☐ in areas showing extensive lifting processes.
- ☐ in mid latitudes along the polar front
- ☒ over oceanic areas at latitudes around 30°N/S.
- ☐ in tropical areas, close to the equator.

83 What cloud type can typically be observed across widespread high pressure areas during summer? (1,00 P.)

- ☐ Overcast low stratus
- ☒ Scattered Cu clouds
- ☐ Overcast Ns clouds
- ☐ Squall lines and thunderstorms

84 What pressure pattern may result from cold-air inflow in high tropospheric layers? (1,00 P.)

- ☒ Formation of a low in the upper troposphere
- ☐ Formation of a high in the upper troposphere
- ☐ Formation of a large ground low
- ☐ Alternating pressure

85 Cold air inflow in high tropospheric layers may result in... (1,00 P.)

- ☒ showers and thunderstorms.
- ☐ stabilisation and calm weather.
- ☐ frontal weather.
- ☐ calm weather and cloud dissipation.

- 86 How does inflowing cold air affect the shape and vertical distance between pressure layers? (1,00 P.)**
- ☐ Increasing vertical distance, raise in height (high pressure)
 - ☐ Decreasing vertical distance, raise in height (high pressure)
 - ☒ Decrease in vertical distance, lowering in height (low pressure)
 - ☐ Increase in vertical distance, lowering in height (low pressure)
- 87 What weather phenomena have to be expected around an upper-level trough? (1,00 P.)**
- ☐ Calm wind, forming of shallow cumulus clouds
 - ☐ Calm weather, formation of lifted fog layers
 - ☐ Formation of high stratus clouds, ground-covering cloud bases
 - ☒ Development of showers and thunderstorms (Cb)
- 88 What frontal line divides subtropical air from polar cold air, in particular across Central Europe? (1,00 P.)**
- ☐ Occlusion
 - ☐ Cold front
 - ☒ Polar front
 - ☐ Warm front
- 89 What weather conditions can be expected in high pressure areas during summer? (1,00 P.)**
- ☐ Changing weather with passing of frontal lines
 - ☐ Squall lines and thunderstorms
 - ☐ Calm winds and widespread areas with high fog
 - ☒ Calm weather and cloud dissipation, few high Cu
- 90 What weather conditions in Central Europe are typically found in high pressure areas during summer? (1,00 P.)**
- ☒ Large isobar spacing with calm winds, formation of local wind systems
 - ☐ Large isobar spacing with strong prevailing westerly winds
 - ☐ Small isobar spacing with calm winds, formation of local wind systems
 - ☐ Small isobar spacing with strong prevailing northerly winds
- 91 What weather conditions can be expected in high pressure areas during winter? (1,00 P.)**
- ☐ Changing weather with passing of frontal lines
 - ☐ Calm weather and cloud dissipation, few high Cu
 - ☒ Calm winds and widespread areas with high fog
 - ☐ Squall lines and thunderstorms

- 92 What wind conditions can be expected in areas showing large distances between isobars? (1,00 P.)**
- ☐ Formation of local wind systems with strong prevailing westerly winds
 - ☐ Strong prevailing easterly winds with rapid backing
 - ☐ Strong prevailing westerly winds with rapid veering
 - ☒ Variable winds, formation of local wind systems
- 93 What weather conditions can be expected during "Foehn" on the windward side of a mountain range? (1,00 P.)**
- ☐ Dissipating clouds with unusual warming, accompanied by strong, gusty winds
 - ☐ Scattered cumulus clouds with showers and thunderstorms
 - ☒ Layered clouds, mountains obscured, poor visibility, moderate or heavy rain
 - ☐ Calm wind and forming of high stratus clouds (high fog)
- 94 Which of the stated wind phenomena will increase in speed since its path is narrowed by mountains? (1,00 P.)**
- ☐ Bora
 - ☒ Mistral
 - ☐ Scirocco
 - ☐ Passat
- 95 What is the name of the the cold, katabatic wind phenomena blowing from northeast into the Adriatic Sea? (1,00 P.)**
- ☐ Scirocco
 - ☐ Mistral
 - ☒ Bora
 - ☐ Passat
- 96 Which of the following conditions are most favourable for ice accretion? (1,00 P.)**
- ☒ Temperatures between 0° C and -12° C, presence of supercooled water droplets (clouds)
 - ☐ Temperatures below 0° C, strong wind, sky clear of clouds
 - ☐ Temperatures between +10° C and -30° C, presence of hail (clouds)
 - ☐ Temperatures between -20° C and -40° C, presence of ice crystals (Ci clouds)
- 97 What temperatures are most dangerous with respect to airframe icing? (1,00 P.)**
- ☐ +5° to -10° C
 - ☒ 0° to -12° C
 - ☐ -20° to -40° C
 - ☐ +20° to -5° C

98 Which type of ice forms by very small water droplets and ice crystals hitting the front surfaces of an aircraft? (1,00 P.)

- ☐ Clear ice
- ☐ Mixed ice
- ☐ Hoar frost
- ☒ Rime ice

99 Which type of ice forms by large, supercooled droplets hitting the front surfaces of an aircraft? (1,00 P.)

- ☐ Hoar frost
- ☒ Clear ice
- ☐ Rime ice
- ☐ Mixed ice

100 What situation may result in the occurrence of severe wind shear? (1,00 P.)

- ☐ Flying ahead of a warm front with visible Ci clouds
- ☐ Cross-country flying below Cu clouds with about 4 octas coverage
- ☐ During final approach, 30 min after a heavy shower has passed the airfield
- ☒ When a shower is visible close to the airfield

101 What conditions are favourable for the formation of thunderstorms? (1,00 P.)

- ☒ Warm humid air, conditionally unstable environmental lapse rate
- ☐ Calm winds and cold air, overcast cloud cover with St or As.
- ☐ Clear night over land, cold air and patches of fog
- ☐ Warm and dry air, strong inversion layer

102 What conditions are mandatory for the formation of thermal thunderstorms? (1,00 P.)

- ☐ Conditionally unstable atmosphere, low temperature and low humidity
- ☐ Absolutely stable atmosphere, high temperature and high humidity
- ☐ Absolutely stable atmosphere, high temperature and low humidity
- ☒ Conditionally unstable atmosphere, high temperature and high humidity

103 With regard to thunderstorms, strong up- and downdrafts appear during the... (1,00 P.)

- ☐ initial stage.
- ☐ dissipating stage.
- ☒ mature stage.
- ☐ thunderstorm stage.

104 Which stage of a thunderstorm is dominated by updrafts? (1,00 P.)

- ☐ Dissipating stage
- ☐ Upwind stage
- ☐ Mature stage
- ☒ Cumulus stage

105 What danger is most imminent when an aircraft is hit by lightning? (1,00 P.)

- ☐ Rapid cabin depressurization and smoke in the cabin
- ☒ Surface overheat and damage to exposed aircraft parts
- ☐ Explosion of electrical equipment in the cockpit
- ☐ Disturbed radio communication, static noise signals

106 Heavy downdrafts and strong wind shear close to the ground can be expected... (1,00 P.)

- ☐ during cold, clear nights with the formation of radiation fog.
- ☒ near the rainfall areas of heavy showers or thunderstorms.
- ☐ during approach to an airfield at the coast with a strong sea breeze.
- ☐ during warm summer days with high, flattened Cu clouds.

107 What phenomenon is caused by cold air downdrafts with precipitation from a fully developed thunderstorm cloud? (1,00 P.)

- ☐ Electrical discharge
- ☐ Anvil-head top of Cb cloud
- ☒ Gust front
- ☐ Freezing Rain

108 What has to be considered when taking off in a ground inversion? (1,00 P.)

- ☐ Climb should be performed with the lowest possible speed and maximum power
- ☐ Due to low temperatures close to the ground, icing has to be expected
- ☒ During climb, a sudden decrease in speed and climb performance has to be expected
- ☐ During the climb, a sudden increase in speed and climb performance has to be expected

109 What danger is most imminent during an approach to an airfield situated in a valley, with strong wind aloft blowing perpendicular to the mountain ridge? (1,00 P.)

- ☐ Reduced visibility, maybe loss of sight to the airfield during final approach
- ☐ Formation of medium to heavy clear ice on all aircraft surfaces
- ☐ Heavy downdrafts within rainfall areas below thunderstorm clouds
- ☒ Wind shear during descent, wind direction may change by 180°

110 What kind of reduction in visibility is not very sensitive to changes in temperature? (1,00 P.)

- ☒ Haze (HZ)
- ☐ Patches of fog (BCFG)
- ☐ Radiation fog (FG)
- ☐ Mist (BR)

111 Information about pressure patterns and frontal situation can be found in which chart? (1,00 P.)

- ☐ wind chart.
- ☒ surface weather chart.
- ☐ Significant Weather Chart (SWC).
- ☐ hypsometric chart.

112 Which weather chart shows the actual air pressure as in MSL along with pressure centers and fronts? (1,00 P.)

- ☐ Hypsometric chart
- ☒ Surface weather chart
- ☐ Prognostic chart
- ☐ Wind chart

113 What information can be obtained from satellite images? (1,00 P.)

- ☐ Temperature and dew point of environmental air
- ☐ Turbulence and icing
- ☐ Flight visibility, ground visibility, and ground contact
- ☒ Overview of cloud covers and front lines

114 What chart shows areas of precipitation? (1,00 P.)

- ☐ GAFOR
- ☐ Wind chart
- ☐ Satellite picture
- ☒ Radar picture

115 What information is NOT found on Low-Level Significant Weather Charts (LLSWC)? (1,00 P.)

- ☐ Information about icing conditions
- ☒ Radar echos of precipitation
- ☐ Information about turbulence areas
- ☐ Front lines and frontal displacements

116 Measured pressure distribution in MSL and corresponding frontal systems are displayed by the... (1,00 P.)

- ☐ prognostic chart.
- ☐ Significant Weather Chart (SWC).
- ☒ surface weather chart.
- ☐ hypsometric chart.

117 In a METAR, "heavy rain" is designated by the identifier... (1,00 P.)

- ☐ RA.
- ☐ +SHRA.
- ☐ SHRA.
- ☒ +RA.

118 In a METAR, "(moderate) showers of rain" are designated by the identifier... (1,00 P.)

- ☐ +RA.
- ☒ SHRA.
- ☐ +TSRA.
- ☐ TS.

119 What information can be found in the ATIS, but not in a METAR? (1,00 P.)

- ☐ Information about current weather, for example types of precipitation
- ☒ Operational information such as runway in use and transition level
- ☐ Information about mean wind speeds, maximum speeds in gusts if applicable
- ☐ Approach information, such as ground visibility and cloud base

120 Weather and operational information about the destination aerodrome can be obtained during the flight by... (1,00 P.)

- ☐ VOLMET.
- ☐ PIREP.
- ☒ ATIS.
- ☐ SIGMET.

121 SIGMET warnings are issued for... (1,00 P.)

- ☐ specific routings.
- ☐ airports.
- ☒ FIRs / UIRs.
- ☐ countries.

122 An inversion is a layer ... (1,00 P.)

- ☐ with increasing pressure with increasing height.
- ☐ with decreasing temperature with increasing height.
- ☐ with constant temperature with increasing height.
- ☒ with increasing temperature with increasing height.

123 What can be expected for the prevailing wind with isobars on a surface weather chart showing large distances? (1,00 P.)

- ☐ Strong pressure gradients resulting in strong prevailing wind
- ☐ Strong pressure gradients resulting in low prevailing wind
- ☐ Low pressure gradients resulting in strong prevailing wind
- ☒ Low pressure gradients resulting in low prevailing wind

124 What is referred to as mountain wind? (1,00 P.)

- ☐ Wind blowing uphill from the valley during daytime.
- ☐ Wind blowing uphill from the valley during the night.
- ☒ Wind blowing down the mountain side during the night
- ☐ Wind blowing down the mountain side during daytime.

125 Under which conditions "back side weather" ("Rückseitenwetter") can be expected? (1,00 P.)

- ☐ before passing of an occlusion
- ☐ During Foehn at the lee side
- ☐ After passing of a warm front
- ☒ After passing of a cold front

126 What wind is reported as 225/15 ? (1,00 P.)

- ☐ north-east wind with 15 kt
- ☐ south-west wind with 15 km/h
- ☐ north-east wind with 15 km/h
- ☒ south-west wind with 15 kt

127 How does air temperature change in ISA from MSL to approx. 10.000 m height? (1,00 P.)

- ☐ from +20° to -40°C
- ☐ from +30° to -40°C
- ☐ from -15° to 50°C
- ☒ from +15° to -50°C

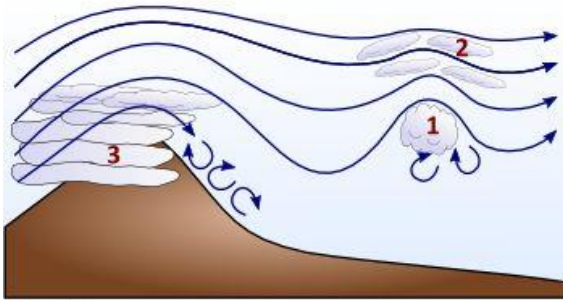
128 What weather is likely to be experienced during "Foehn" in the Bavarian area close to the alps? (1,00 P.)

- ☐ High pressure area overhead Biskaya and low pressure area in Eastern Europe
- ☐ Cold, humid downhill wind on the lee side of the alps, flat pressure pattern
- ☐ Nimbostratus cloud in the northern alps, rotor clouds at the windward side, warm and dry wind
- ☒ Nimbostratus cloud in the southern alps, rotor clouds at the lee side, warm and dry wind

129 Mountain side updrafts can be intensified by ... (1,00 P.)

- ☒ Solar irradiation on the windward side
- ☐ Solar irradiation on the lee side
- ☐ By warming of upper atmospheric layers
- ☐ thermal radiation of the windward side during the night

Anlage 1



MET-001

Anlage 2



Anlage 3



Anlage 4

