HUMAN PERFORMANCE

1.The majority of aviation accidents are caused by...

technical failure.

geographical influences.

human failure.

meteorological influence

2. The SHELL model is used to explain...

a multi-stage error chain which has been induced by people who are directly involved.

the different areas of interaction a pilot has to cope with.

the occurrence of stress in the cockpit.

the advantages of closed communication loops.

3. The "swiss cheese model" can be used to explain the...

error chain.

state of readiness of a pilot.

procedure for an emergency landing.

optimal problem solution.

4 .Flying abilities can be achieved by changing your performance and behaviour, which is obtained through...

a personal development process.

experience and exercise.

a natural pattern of behaviour.

the influence of pharmaceuticals.

5. Mental training will enhance the aeronautical performance. This can be used successfully...

with all aeronautical activities.

mainly for flight students.

only for flight instructors.

only with a certain amount of flight experience.

6. What is the percentage of oxygen in the atmosphere at 6000 ft?

12 %

21 %

78 %

18.9 %

7. Which gas law is responsible for the decompression sickness (DCS)?

Dalton's gas law

Bohr's gas law

Boyle-Mariotte's gas law

Henry's gas law

8. At which altitude is the atmospheric pressure half the MSL value (1013 hPa)?

5000 ft

10000 ft

18000 ft

22000 ft

9. Carbon monoxide poisoning can be caused by...

smoking.

alcohol.

unhealthy food.

little sleep.

10. What does the term "redout" mean?

"Red vision" during negative g-loads

Anaemia caused by an injury

Falsified colour perception during sunrise and sunset

Rash during decompression sickness

11. Which kind of risks are associated with the use of handheld pulse oximeters?

Pulse oximeters do not work below 10000 ft

Hyperventilation is not detected by a pulse oximeter

A pulse oximeter can be only used twice

Pulse oximeters can interfere with the avionics

12. Carbon monoxide poisoning can be caused by...

Pitot icing.

generator failure.

fuel or hydraulic fluids.

cracks in the heat exchanger.

13.Which of the following is NOT a symptom of hyperventilaton?

Tingling

Spasm

Cyanose

Loss of consciousness

14 .Anemic hypoxia can be caused by...

carbon monoxide poisoning.

high altitudes.

alcohol.

low pressure.

15. What is the function of the red blood cells (erythrocytes)?

Oxygen transport

Immune defense

Blood coagulation

Blood sugar regulation

16. Which of the following is responsible for the blood coagulation?

Red blood cells (erythrocytes)

White blood cells (leucocytes)

Blood plates (thrombocytes)

Capillaries of the arteries

17. What is the function of the white blood cells (leucocytes)?

Oxygen transport

Immune defense

Blood coagulation

Blood sugar regulation

18. Which of the following symptoms may indicate hypoxia?

Blue discolouration of lips and fingernails

Muscle cramps in the upper body area

Blue marks all over the body

Joint pain in knees and feet

19. Which of the human senses is most influenced by hypoxia?

The auditory perception (hearing)

The tactile perception (sense of touch)

The visual perception (vision)

The oltfactory perception (smell)

20. From which altitude on does the body usually react to the decreasing atmospheric pressure?

2000 feet

7000 feet

10000 feet

12000 feet

21. The first effects of a lack of oxygen in the bloodstream include...

light dizziness, nausea and fatigue.

a feeling of anxiety, perspiration and sometimes a headache.

disappearance of inhibitions, vision disorder and difficulties in completing mental tasks.

impaired muscular control, partial loss of memory and a feeling of euphoria.

22. The chemical receptors in the brain which monitor levels of oxygen and carbon dioxide in the body are most sensitive to changes of...

carbon dioxide.

oxygen.

equally both carbon dioxide and oxygen.

carbon dioxide below and oxygen above 5000 ft.

23. How is the condition called when the body does not have sufficient oxygen to meet its needs?

Hyperventilation

Hyperbolism

Hypoxia

Hyperpnoea

24. What is the meaning of the term "time of useful consciousness"?

The amount of time an individual is able to perform flying duties efficiently in an environment of adequate oxygen supply

The time between inadequate oxygen supply and total unconsciousness

The amount of time an individual is able to perform flying duties efficiently in an environment of inadequate oxygen supply

The time from when breathable air is no longer available to the time of unconsciousness

25. A tobacco smoker is - compared with a non-smoker - likely to experience the symptoms of hypoxia at...

a higher cabin altitude.

a lower altitude.

a higher altitude.

the same altitude.

26. Haemoglobin is most attracted to...

nitrogen.

oxygen.

carbon dioxide.

carbon monoxide.

27 .During a low level VFR flight the pilot experiences a tingling in the hands, light vision disorders and a lack of concentration together with dizziness. These indications are symptomatic of...

hypoxia.

coronary.

cardiac arrhythmia.

hyperventilation.

28. Which counteraction could be carried out in case of hyperventilation?

Execute the "Valsalva manoeuvre"

Restore a normal rate of respiration and breathe into and out of a bag

Breathe 100 % pure oxygen

Cool the forehead with a compress

29. The circulatory system...

supplies muscles with carbon dioxide.

distributes blood around the body.

supplies organs with water.

provides the removal of oxygen out of the organs.

30. Following a blood donation the pilot should not fly for the next...

2 hours.

12 hours.

18 hours.

24 hours.

31. What is a proper aeronautical procedure with the symptoms of pressure balance discomfort?

Perform swallowing and chewing or the Valsalva manoeuvre

Increase the rate of descent of the aircraft

Chewing and swallowing movements have to be stopped immediately

Use of medication against cold in large doses

32. What is the time of useful consciousness (TUC) which remains after a breakdown of the oxygen supply in 7500 m (25000 ft) before becoming incapacitated?

More than 3 hours

30 minutes

60 to 90 seconds

3 to 6 minutes

33. Triggering factors for hyperventilation can be...

emotions like fear, excitement and stress.

tiredness, condition of monotony.

g-forces appearing when flying a narrow coordinated turn.

a severe flu and swollen mucous membranes.

34. What is an appropriate reaction when a passenger during cruise flight suddenly feels uncomfortable?

Switch on the heater blower and provide thermal blankets

Avoid conversation and choose a higher airspeed

Adjust cabin temperature and prevent excessive bank

Give additional oxygen and avoid low load factors

35. What ist the correct term for an involuntary and stereotypical reaction of an organism to the stimulation of a receptor?

Reflex

Reduction

Virulence

Coherence

36. Which option lists different parts of the human nervous system?

The cardiac, autonomic, and central nervous system

The peripheral, autonomic, and central nervous system

The peripheral, autonomic, and circulatory nervous system

The peripheral, synaptic, and central nervous system

37. From about which altitude on does the night vision capability start to diminish?

3000 ft

5000 ft

7000 ft

10000 ft

38. Which statement is correct concerning laser attacks on aircraft?

There will be an immediate complete loss of eyesight

The safe continuation of the flight is endangered

The impact is more serious during daytime than during nighttime

Electronic systems can be damaged or blocked

39. Which part of the visual system is responsible for colour vision?

Rods

Cones

Macula

Blind spot

40. The light sensitive part of the eye is the...

iris.

pupil.

retina.

lens.

41. The most effective scanning method is...

to concentrate on a particular area for about 10 seconds.

a selective concentration on the most likely areas of conflicting traffic.

the slow sweeping of the entire field of view from left to right.

a series of short spaced eye movements, progressing across the field of view.

42. Within poor visibility the eyes try to focus on which viewing distance?

At infinity

1 to 2 m ahead

Approximately 500 m ahead

A few cm ahead

43. The connection between middle ear and nose and throat region is called...

eardrum.

eustachian tube.

cochlea.

inner ear.

44. During a descent pain could be caused in the eardrum when problems arise with pressure compensation. Which statement is correct?

This will make the passenger unfit to fly

This may be prevented e.g. by swallowing

This is of no relevance in aviation

This can be treated only with pharmaceuticals

45. Wings level after a longer period of turning can lead to the impression of...

steady turning in the same direction as before.

starting a descent.

turning into the opposite direction.

starting a climb.

46. Which of the following options does NOT stimulate motion sickness (disorientation)?

Flying under the influence of alcohol

Non-accelerated straight and level flight

Head movements during turns

Turbulence in level flight

47. An acceleration during a straight horizontal flight can lead to the illusion of...

a descent.

a climb.

a bank.

an inverted flight.

48. Whilst maintaining a straight and level attitude, the process of accelerating may produce the sensation of...

pitching nose-up.

turning right.

pitching nose-down.

turning left.

49. Increasing positive g-forces can generate symptoms in which sequence?

Visual disturbances, tunnel vision, blackout and unconsciousness

Visual disturbances, unconsciousness, blackout and tunnel vision

Blackout, visual disturbances, tunnel vision and unconsciousness

Unconsciousness, blackout, tunnel vision and visual disturbances

50. What is a Coriolis illusion?

Wrong interpretation of altitude during approach

Apparent movement of static objects at night

False perception of colour due to strong accelerations

Heavy vertigo due to head movements during turns

51. Which optical illusion might be caused by a runway with an upslope during the approach?

The pilot has the feeling that the approach is too low and therefore approaches the runway above the regular glide slope

The pilot has the feeling that the approach is too fast and reduces the speed below the normal approach speed

The pilot has the feeling that the approach is too high and therefore descents below the regular glide slope

The pilot has the feeling that the approach is too slow and speeds up above the normal approach speed

52. The occurence of a vertigo is most likely when moving the head...

during a climb.

during a descent.

during a straight horizontal flight.

during a turn.

53. A Grey-out is the result of...

hyperventilation.

positive g-forces.

tiredness.

hypoxia.

54. Visual illusions are mostly caused by...

binocular vision.

colour blindness.

rapid eye movements.

misinterpretation of the brain.

55. Which is the most accurate source of sensory information the pilot can rely on after a steep turn?

The skeletal muscles

The seat-of-the-pants orientation

The eyesight

The semicircular canals of the inner ear

56. How does an aircraft on a reciprocal course appear on the pilot's field of vision?

It moves across from one side to the other

It remains stationary at first, then decreases in size slowly and afterwards rapidly

It is not visible for the pilot at all

It remains stationary at first, then increases in size slowly and afterwards rapidly

57 .When finishing a co-ordinated turn, which impression could arise?

Straight and level flight

Descent with a turn in opposite direction

Steady turn

Climbing

58 .When a pilot has gastroenteritis, he / she is...

fit to fly with the permission of a medical examiner.

fit to fly under all circumstances.

unfit to fly under all circumstances.

fit to fly with approved medication.

59. The human circadian cycle is based on a cycle of approximately...

13 hours.

25 hours.

10 hours.

22 hours.

60. The average decrease of blood alcohol level for an adult in one hour is approximately...

0.1 percent.

0.03 percent.

0.3 percent.

0.01 percent.

61. What has to be taken into consideration when comparing medication which is only available on prescription with medication that is available over the counter?

Generally both types of medication have to be handled in the same way

Medication which is only available on prescription is considered to have an impact on flight performance only if explicitly noted on the package insert

Medication which is available over the counter is safe as long as a doctor has not expressed an opinion to the contrary

There is a notification requirement for medication which is sold over the counter if it is taken for a period exceeding 10 days

62. Which answer states a risk factor for diabetes?

Sport diving

Long range flights

Smoking

Overweight

63. Which of the follwing documents contain a list of criteria which have an influence on the aeronautical medical certificate or which at least demand an immediate consultation of an aeromedical examiner?

Medical certificate

Licence

Flight log

Log book

64. Which of the following options does NOT require an immendiate consultation of an aeromedical examiner?

Pregnancy

Regular intake of medication

Preventive dental screening

First prescription of glasses.

65. What has to be taken into account on vaccination and flying?

It does not affect the ability to fly

It will lead to a one-week flight inability

The effect of a vaccination can be compensated with medication

It may lead to impaired reactions experienced after a couple of days

66. Which statement concerning prescription-free available drugs is correct?

Before a pilot intends to fly after having taken pharmaceuticals, an aeromedical examiner should be consulted

These pharmaceuticals are harmless because they increase the reasoning and the judgment of the pilot

Pharmaceuticals which can be purchased without prescription, do not have any side effects on the pilot

The side effects of those pharmaceuticals can be neglected by the pilot (refer to the package leaflet)

67. Carbon monoxide in a cockpit could be caused by...

a malfunction of the cabin lighting.

flying nearby a thunderstorm.

a lack of cockpit ventilation.

a leaking cockpit heat exchanger.

68. What is the approximate time to dissipate a blood alcohol level (BAL) of 0.15 from the blood?

15 Minutes

1 (one) hour

12 hours

24 hours

69. Which statement is most correct in connection with alcohol?

Increased altitude greatly decreases the adverse effects of alcohol

Drinking increases the rate of alcohol oxidation

Sleeping increases the rate at which the body processes alcohol

Increased altitude greatly increases the adverse effects of alcohol

70. A military aircraft and a light aircraft are maintaining a head on collision course with a closing speed of approximately 550 kt and a flight visibility of 5 km. How much time would either pilot have to take avoiding action if visual contact was made at the maximum possible range?

About 9 seconds

About 18 seconds

About 25 seconds

About 28 seconds

71. Which statement is correct with regard to the interaction between perception and experience?

Experience has a significant influence to our perception

The interaction between perception and experience is limited to optical illusions

Experience and perception are totally different parts of the perception process

The interaction has no relevance for flight safety

72. When approaching a runway that is believed to be significantly smaller than it actually is, it may appear to be...

farther away than it actually is.

nearer than it actually is.

longer than it actually is.

shorter than it actually is.

73. A pilot is approaching a down sloping runway without any visual glide slope guidance. This could result in...

a step down approach.

an approach which is too shallow.

an approach which is too steep.

an approach which is close beside the intended track.

74. When a fast military aircraft and a light aircraft are on a head on collision course, how would the light aircraft pilot perceive the approach of the military aircraft?

The military aircraft would grow very quickly at a constant rate

The initial growth would be rapid, the further growth clearly slower

The initial growth would be slow, the growth close to the impact very rapid

The initial perception would be constant, the further growth very rapid

75. The time between the recognition of an imminent air collision and the time of action is...

approximately 2 seconds.

110 to 140 seconds.

approximately 5 to 10 seconds.

20 to 35 seconds.

76. The terrain ahead of a runway slopes down towards the threshold. There is a possible danger of...

approaching too low.

coming too short.

going too far.

too short landing.

77. Which statement is correct with regard to the short-term memory?

It can store 5 (±2) items for 1 to 2 minutes

It can store 10 (±5) items for 30 to 60 seconds

It can store 3 (±1) items for 5 to 10 seconds

It can store 7 (±2) items for 10 to 20 seconds

78. For what approximate time period can the short-time memory store information?

3 to 7 seconds

30 to 40 seconds

10 to 20 seconds

35 to 50 seconds

79. An excellent training condition and experience of a pilot...

do not prevent the pilot from making mistakes.

increase the probability to make mistakes.

does not have influence on the probability to make errors.

increases the danger of pilot errors among competition pilots.

80. What is a latent error?

An error which is made by the pilot actively and consciously

An error which only has consequences after landing

An error which has an immediate effect on the Controls

An error which remains undetected in the system for a long time

81. Mistakes could be used to learn, but mistakes from pilots are seldom revealed because...

they are often sanctioned negatively.

it is forbidden.

it damages the reputation of the general aviation.

it is a matter of the authorities.

82. What does the abbreviation "FORDEC" mean?

Flight Operations Regarding DEicing Concepts

Findings Of Regulation Disablement in Emergency Cases

Fire Or Rescue DEpartment Call

Facts, Options, Risks / Benefits, Decision, Execution, Check

83. How could critical decisions which may lead to accidents be avoided?

The pilot has to reduce the level of stress and make rational decisions based on standard procedures

The pilot should request a feedback from ATC after the landing

The crew should review the complete flight after the landing

The pilot has to make emotional decisions, especially during take-off and landing

84. What does the abbreviation "CFIT" mean?

Controlled Flight Into Terrain

Central Flight Instructor Training

Cargo Fire in Tail Compartment

Company Fuel Index Tool

85. What is the meaning of the "1:600 rule" regarding aviation accidents?

1 fatal accident per 600 incidents

1 engine failure per 600 flight hours

1 incident per 600 flight students

1 accident per 600 days

86 .The ongoing process to monitor the current flight situation is called...

situational awareness.

constant flight check.

situational thinking.

anticipatory check procedure.

87. A seating position in which the pilot would be seated lower than the permissible height according to the construction manual of the cockpit...

does not have influence on the visibility when approaching.

enhances the noise perception in the cockpit.

decreases the forward visibility and the oblique view to the ground during approach.

allows the pilot on the final leg to have a better view of the landing cross.

88. Regarding the communication model, how can the use of the same code during radio communication be ensured?

By a particular frequency allocation

By the use of radio phraseology

By the use of proper headsets

By using radios certified for aviation use only

89 .Insufficient communication can lead to incidents or flight accidents. The main factor/s is / are...

failure of radio communication

wrong information at the clearance.

listening errors, misunderstanding.

difference between dialect and working language.

90. Which of the following attitudes are not hazardous when piloting an aircraft?

Macho

Impulsivity

Infallibility

Synergetic

91. Under which circumstances is it more likely to accept higher risks?

If there is not enough information available

Due to group-dynamic effects

During check flights due to a high level of nervousness

During flight planning when excellent weather is forecast

92 .What is the meaning of "risky shift"?

Spontaneous change of landing direction when the runway has an upslope

Seat adjustment in flight

Crossing of rudder and ailerons on short final

The tendency to accept higher risks in groups

93. Which dangerous attitudes are often combined?

Self-abandonment and macho

Invulnerability and self-abandonment

Impulsivity and carefulness

Macho and invulnerability

94. Which factor can lead to human error?

Double check of relevant actions

Proper use of checklists

To be doubtful if something looks unclear or ambiguous

The bias to see what we expect to see

95. Which are the main hazardous attitudes of a pilot?

Overestimation, lack of decisiveness, self-confidence, inattentiveness

Lack of confidence, resignation, lack of situational awareness

Lack of discipline, impulsivity, invulnerability, resignation, overestimation

Resignation, self-confidence, self-criticism

96. Complacency is a risk due to...

the high number of mistakes normally made by humans.

increased cockpit automation.

better training options for young pilots.

the high error rate of technical systems.

97. How do you adjust yourself to the hazardous attitude of resignation?

It is stupid to take such a high risk!

I am not helpless, I can change something!

I will obey to the regulations and rules!

Not so fast. Think about it!

98. Which of the following qualities are influenced by stress? 1. Attention 2. Concentration 3. Responsiveness 4. Memory"

1

1, 2, 3

2, 4

1, 2, 3, 4

99. Excessive stress during a flight influences the ability to handle information. Therefore...

one should strive for distraction.

the receptiveness for additional information increases.

the receptiveness for additional information decreases.

a full mental blockage is the result.

100. What can cause an increased number of errors, tunnel vision and reduced attention?

Fatigue

Sports

Unhealthy food

Relaxation training