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Module 09, Human Factors.

09.1. General.

Question Number. 1. Accidents and engineering faults are.

Option A. insignificant and decreasing.

Option B. significant and increasing.

Option C. insignificant and increasing.

Correct Answer is. significant and increasing.

Explanation. CAP 715 Ch.1 Para.2.5 CAP 716

App.G pg.2 Para 1.3.1.

Question Number. 2. Murphy's law is perpetuated mainly by.

Option A. violations.

Option B. poor aircraft design.

Option C. complacency.

Correct Answer is. complacency.

Explanation. CAP 715 Ch.1 Para.3.1.

Question Number. 3. Murphy's law can be regarded as the notion.

Option A. If something can go wrong it will'.

Option B. It can never happen to me'.

Option C. If something goes wrong I am certain to get the blame'.

Correct Answer is. If something can go wrong it will'.

Explanation. CAP 715 Ch.1 Para.3.1.

Question Number. 4. A company's safety policy should be defined in.

Option A. in CAP 716.

Option B. the Maintenance Schedule.

Option C. the Maintenance Organization Exposition.

Correct Answer is. the Maintenance Organization Exposition.

Explanation. CAP 715 Ch.2 Para.2.1.

Question Number. 5. Which of the following is least associated with the study of human factors?.

Option A. Ergonomics.

Option B. Health and Safety.

Option C. Human error.

Correct Answer is. Health and Safety.

Explanation. CAP 715 Ch.9 (1st Para.).

Question Number. 6. The incident where a 737 lost oil from both engines is a direct result of.

Option A. poor design.

Option B. human error.

Option C. engine vibration.

Correct Answer is. human error.

Explanation. CAP 716 Ch.4 Para.5.4.2 and App.F Para.1.7.

Question Number. 7. If a 737 had both engines serviced and lost oil from both engines in flight. This.

Option A. can be expected to happen statistically due to the number of aircraft in service.

Option B. would be a direct result of human error.

Option C. can be considered an acceptable probability.

Correct Answer is. would be a direct result of human error.

Explanation. CAP 716 App.F Para 1.7.

Question Number. 8. What do you do when someone is hypothermic?.

Option A. Warm them up.

Option B. Feed them sweet things because of their diabetes.

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Option C. Give them a drink because of dehydration.

Correct Answer is. Warm them up.

Explanation. Hypothermia is dangerously low body temperature.

Question Number. 9. The percentage of accidents attributable to aircraft maintenance and inspection causes is.

Option A. now less significant due to the introduction of more sophisticated aircraft.

Option B. significant and rising.

Option C. now less significant due to more advanced maintenance practices.

Correct Answer is. significant and rising.

Explanation. CAP 718 Ch.1 Para.1 and 4. CAP 716 App.G Para.1.3.1.

Question Number. 10. What happened to contribute towards the incident in 1995 where a Boeing 737 lost oil pressure and had to divert?.

Option A. Both warning indications were faulty, due to crossed connections.

Option B. The HP rotor drive covers of both engines had not been refitted after a boroscope inspection.

Option C. The boroscope inspection had been inadequate.

Correct Answer is. The HP rotor drive covers of both engines had not been refitted after a boroscope inspection.

Explanation. CAP 715 Ch.6 App.F Para.1.7 or CAP715. Ch.1 Para. 2.6.1.

Question Number. 11. What is the most common cause of in-flight engine shutdown?.

Option A. Incomplete installation.

Option B. Improper fault isolation, inspection or test.

Option C. Foreign object damage.

Correct Answer is. Incomplete installation.

Explanation. In a Boeing study of 276 inflight shutdowns, 94% of were due to incomplete, improper instalation, damage on instalation, equipment not installed - FOD was a contributing factor.

Question Number. 12. Most engineering related incidents are due to.

Option A. installing dirty connectors.

Option B. installing components incorrectly.

Option C. installing worn or old components.

Correct Answer is. installing components incorrectly.

Explanation. CAP 715 Ch.1 Para.2.

Question Number. 13. What causes the most aircraft accidents?.

Option A. Technical faults.

Option B. Communication.

Option C. Misunderstanding between ATC and pilot on approach.

Correct Answer is. Communication.

Explanation. Deduced from CAP 715 Ch.1 Para.2.2 since 'inadequate cross check' is a communication problem.

09.2. Human Performance and Limitations.

Question Number. 1. 70 - 80% of the total focusing ability of the eye is carried out by the.

Option A. iris.

Option B. cornea.

Option C. lens.

Correct Answer is. cornea.

Explanation. CAP 715 Ch.2 Para.2.2.

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Question Number. 2. At what distance should a person without hearing difficulties be able to hear an average conversational voice in a quiet room.

Option A. 2 metres (6 feet).

Option B. 3 metres (9 feet).

Option C. 1 metre (3 feet).

Correct Answer is. 2 metres (6 feet).

Explanation. AWN 47 Para.3.5 and CAP 715

Ch.2 Para.3.10.1.

Question Number. 3. A perforated ear drum could occur if.

Option A. you were subjected to intermittent noise above 25 kHz.

Option B. you blew your nose excessively.

Option C. you were subjected to continuous noise below 8 kHz.

Correct Answer is. you were subjected to continuous noise below 8 kHz.

Explanation. Normal audible range is 20 - 20,000 Hz (CAP 715 Ch.5 Para.1.1). 8 kHz is high frequency. Anything below that can cause damage if sound level is too high.

Question Number. 4. How long is the short term memory good for remembering 7 items?.

Option A. 30 to 60 seconds.

Option B. Up to 30 seconds.

Option C. Above 60 seconds.

Correct Answer is. Up to 30 seconds.

Explanation. CAP 715 Ch.2 Para.4.5.5.

Question Number. 5. What is white finger?.

Option A. A disorder of the finger which may occur through continuous use of pneumatic tools because of reduced blood flow.

Option B. A reaction when the white blood cells die and contaminate the fingers.

Option C. A skin disorder caused by extensive contact with oils and solvents.

Correct Answer is. A disorder of the finger which may occur through continuous use of pneumatic tools because of reduced blood flow.

Explanation. CAP 715 Ch.5 Para.5.2.

Question Number. 6. When someone is working in an enclosed space (such a fuel tank), another person should be outside the space in constant communication to.

Option A. provide instructions to the tradesman.

Option B. ensure compliance with the maintenance manual.

Option C. for safety reasons.

Correct Answer is. for safety reasons.

Explanation. CAP715 Ch.5 Para. 6 This is the normal procedure for the safety of the tradesman.

Question Number. 7. The scientific study of measurements of the human body is known as.

Option A. ergonomics.

Option B. physiology.

Option C. anthropometrics.

Correct Answer is. anthropometrics.

Explanation. CAP 715 Ch.1 Para.1.4.4 From the Greek 'Anthropos' meaning 'a man' and 'Metron' meaning 'measurement'.

Question Number. 8. How long can the aural reflex protect the ear from loud noise?.

Option A. 5 seconds.

Option B. 15 seconds.

Option C. 15 minutes.

Correct Answer is. 15 minutes.

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Explanation. CAP 715 Ch.2 Para.3.3.

Question Number. 9. What part of the eye controls the amount of light that is allowed to enter the eye?.

Option A. The pupil.

Option B. The iris.

Option C. The cornea.

Correct Answer is. The iris.

Explanation. CAP 715 Ch.2 Para.2.3.

Question Number. 10. Learning of a routine by repeated practice is known as.

Option A. cognitive learning.

Option B. motor programming.

Option C. episodic memory.

Correct Answer is. motor programming.

Explanation. CAP 715 Ch.2 Para.4.6.

Question Number. 11. The ear is used to detect.

Option A. speed.

Option B. neither acceleration or speed.

Option C. acceleration.

Correct Answer is. acceleration.

Explanation. CAP 715 Ch.2 Para.3.1.1.

Question Number. 12. Light enters the eye through the.

Option A. cornea.

Option B. visual cortex.

Option C. retina.

Correct Answer is. cornea.

Explanation. CAP 715 Ch.2 Para.2.1.

Question Number. 13. To focus on a near object, the lens of the eye must.

Option A. be widened.

Option B. be flattened.

Option C. be thickened.

Correct Answer is. be thickened.

Explanation. CAP 715 Ch.2 Para.2.4.

Question Number. 14. Which type of memory is most susceptible to interference from external influences?.

Option A. Long term.

Option B. Ultra short term.

Option C. Short term.

Correct Answer is. Short term.

Explanation. CAP 715 Ch.2 Para.4.8.8.

Question Number. 15. Peripheral vision is detected by the.

Option A. cones.

Option B. fovea.

Option C. rods.

Correct Answer is. rods.

Explanation. CAP 715 Ch.2 Para.2.5.1.

Question Number. 16. Extreme discomfort experienced by a maintenance engineer due to working in a confined space is known as.

Option A. claustrophobia.

Option B. acrophobia.

Option C. agoraphobia.

Correct Answer is. claustrophobia.

Explanation. CAP 715 Ch.2 Para.5.1.1.

Question Number. 17. What part of the eye is colour sensitive?.

Option A. The rods.

Option B. The cones.

Option C. The iris.

Correct Answer is. The cones.

Explanation. CAP 715 Ch.2 Para.2.5.1.

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Question Number. 18. What type of lens is used to overcome short sightedness?.

- Option A. Concave.
- Option B. Bi-focal.
- Option C. Convex.

Correct Answer is. Concave.

Explanation. CAP 715 Ch.2 Para.2.7.2.

Question Number. 19. The type of memory which is most easily influenced by a person's expectations of what should have happened is the.

- Option A. long term memory.
- Option B. semantic memory.
- Option C. episodic memory.

Correct Answer is. episodic memory.

Explanation. CAP 715 Ch.2 Para.4.5.8.

Question Number. 20. The inability for the eyes to accommodate sufficiently is known as.

- Option A. Presbyopia.
- Option B. Hypermetropia.
- Option C. myopia.

Correct Answer is. Presbyopia.

Explanation. CAP 715 Ch.2 Para.2.7.4.

Question Number. 21. An aircraft maintenance engineer who wears glasses or contact lenses should.

- Option A. not require their duties to be restricted providing they wear their glasses/contact lenses at all times they carry out their duties.
- Option B. have their duties restricted accordingly.
- Option C. not require their duties to be restricted providing they have frequent checks to ensure the adequacy of their glasses/contact lenses.

Correct Answer is. not require their duties to be restricted providing they have frequent checks to ensure the adequacy of their glasses/contact lenses.

Explanation. CAP 715 Ch.2 Para.2.12.2 and Ch.6 Para.3.3.

Question Number. 22. Ultra short term memory has a duration of about.

- Option A. 10 to 20 seconds.
- Option B. 80 - 100 milliseconds.
- Option C. 2 seconds.

Correct Answer is. 2 seconds.

Explanation. CAP 715 Ch.2 Para.4.5.4.

Question Number. 23. What type of lens is used to correct long sightedness?.

- Option A. Concave.
- Option B. Convex.
- Option C. Bi-focal.

Correct Answer is. Convex.

Explanation. CAP 715 Ch.2 Para.2.7.1.

Question Number. 24. Visual Acuity is the ability.

- Option A. to differentiate between different colours.
- Option B. to detect objects in the peripheral vision.
- Option C. of the eye to discriminate sharp detail at varying distances.

Correct Answer is. of the eye to discriminate sharp detail at varying distances.

Explanation. CAP 715 Ch.2 Para.2.4.

Question Number. 25. The 'working memory' is.

- Option A. long term memory.
- Option B. short term memory.
- Option C. ultra short term memory.

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Correct Answer is. short term memory.

Explanation. CAP 715 Ch.2 Para.4.5.3.

Option C. blue and green.

Correct Answer is. red and green.

Explanation. CAP 715 Ch.2 Para.2.11.2.

Question Number. 26. Colour defective

vision affects.

Option A. almost 1 in 10 of men.

Option B. more women than men.

Option C. almost 1 in 10 of women.

Correct Answer is. almost 1 in 10 of men.

Explanation. CAP 715 Ch.2 Para.2.11.2.

Question Number. 30. The 'cocktail party effect' is descriptive of.

Option A. selective attention.

Option B. divided attention.

Option C. focused attention.

Correct Answer is. selective attention.

Explanation. CAP 715 Ch.2 Para.4.3.3.

Question Number. 27. At lower light

levels, the visual sensing is performed mainly by the.

Option A. fovea.

Option B. cones.

Option C. rods.

Correct Answer is. rods.

Explanation. CAP 715 Ch.2 Para.2.5.1.

Question Number. 31. Hypermetropia is the medical name for.

Option A. short sightedness.

Option B. long sightedness.

Option C. deafness.

Correct Answer is. long sightedness.

Explanation. CAP 715 Ch.2 Para.2.7.1.

Question Number. 28. If an image formed

on the retina of the eye is inverted relative to the viewers normal perception of the image, the viewer will.

Option A. become disoriented and dizzy.

Option B. consciously mentally revert the image so as to make sense of his/her surroundings.

Option C. behave and feel normal.

Correct Answer is. behave and feel normal.

Explanation. The lens of the eye inverts the image, which is subconsciously reverted by the brain.

Question Number. 32. What range of sound is usually impaired first with the onset of presbycusis?.

Option A. High pitch sound.

Option B. Low pitch sound.

Option C. Mid range sound.

Correct Answer is. High pitch sound.

Explanation. CAP 715 Ch.2 Para.3.9.

Question Number. 33. The amount of light which is allowed to enter the eye can vary by a factor of.

Option A. 500:1.

Option B. 5:1.

Option C. 1:5.

Correct Answer is. 5:1.

Explanation. CAP 715 Ch.2 Para.2.3.

Question Number. 29. People with colour defective vision usually have difficulty differentiating between.

Option A. red and green.

Option B. blue and yellow.

Correct Answer is. 5:1.

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Question Number. 34. Presbyopia often effects the eyes of people after the age of.

Option A. 55.

Option B. 40.

Option C. 70.

Correct Answer is. 40.

Explanation. CAP 715 Ch.2 Para.2.7.4.

Question Number. 38. The inability for the eyes to accommodate sufficiently is known as.

Option A. myopia.

Option B. hypermetropia.

Option C. presbyopia.

Correct Answer is. presbyopia.

Explanation. CAP 715 Ch.2 Para.2.7.4.

Question Number. 35. From what age does hearing ability normally begin to decline?.

Option A. 40.

Option B. 50.

Option C. 30.

Correct Answer is. 30.

Explanation. CAP 715 Ch.2 Para.3.9.

Question Number. 39. Ultra short term memory has a duration of about.

Option A. 10 to 20 seconds.

Option B. 2 seconds.

Option C. 80 - 100 milliseconds.

Correct Answer is. 2 seconds.

Explanation. CAP 715 Ch.2 Para.4.5.4.

Question Number. 36. A person with 20/40 vision has.

Option A. worse eyesight as a person with 20/20 vision.

Option B. better eyesight than a person with 20/20 vision.

Option C. the same eyesight as a person with 20/20 vision.

Correct Answer is. worse eyesight as a person with 20/20 vision.

Explanation. CAP 715 Ch.2 Para.2.6.3.

Question Number. 40. The memory can be aided by.

Option A. a checklist.

Option B. memory checking.

Option C. mind logging.

Correct Answer is. a checklist.

Explanation. CAP 715 Ch.6 Para.4.5 ('appropriate guidance material').

Question Number. 37. Long term memory capacity is usually.

Option A. unlimited.

Option B. 4 - 8 years.

Option C. 12 months.

Correct Answer is. unlimited.

Explanation. CAP 715 Ch.2 Para.4.5.7.

Question Number. 41. In AWN 47 what is the recommended hearing test?.

Option A. The ability to hear an average conversation voice at a distance of 10 feet.

Option B. The ability to hear a certain noise at 8 feet.

Option C. The ability to hear an average conversation voice at a distance of 6 feet.

Correct Answer is. The ability to hear an average conversation voice at a distance of 6 feet.

Explanation. AWN 47 Par.3.5.

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Question Number. 42. Iconic memory.

Option A. stores sounds and lasts up to 2 seconds.

Option B. stores visual information and lasts up to 1/2 second.

Option C. stores visual information and lasts up to 2 seconds.

Correct Answer is. stores visual information and lasts up to 1/2 second.

Explanation. CAP 715 Ch.2 Para.4.2.

Question Number. 43. The first stage in information processing is.

Option A. decision.

Option B. memorizing.

Option C. perception.

Correct Answer is. perception.

Explanation. CAP 715 Ch.2 Para.4.3.8.

Question Number. 44. Information, if not rehearsed is lost in.

Option A. 10 - 20 seconds.

Option B. 1 minute.

Option C. 30 - 40 seconds.

Correct Answer is. 10 - 20 seconds.

Explanation. eCAP 715 Ch.2 Para.4.5.5.

Question Number. 45. In AWN 47, what is the standard hearing test?.

Option A. The ability to hear a conversation in a quiet room at 2 metres.

Option B. The ability to hear a conversation in a quiet room at 10 metres.

Option C. The ability to hear a conversation in a noisy room at 2 metres.

Correct Answer is. The ability to hear a conversation in a quiet room at 2 metres.

Explanation. AWN 47 Para.35.

Question Number. 46. Information in the short term memory not rehearsed will be lost in.

Option A. 10 - 20 seconds.

Option B. 1 - 3 months.

Option C. 2 - 3 weeks.

Correct Answer is. 10 - 20 seconds.

Explanation. CAP 715 Ch.2 Para.4.5.5.

Question Number. 47. What is the CAA standard for vision?.

Option A. Acceptable uncorrected vision.

Option B. Acceptable corrected vision.

Option C. 18/20 vision.

Correct Answer is. Acceptable corrected vision.

Explanation. AWN 47 Para.3.4.

Question Number. 48. In the human eye most of the refraction required to bring an image into focus on the retina is accomplished by the. iris.

Option A. lens.

Option B. cornea.

Option C.

Correct Answer is. cornea.

Explanation. CAP 715 Ch.2 Para.2.2.

Question Number. 49. The average capacity of the working memory is about.

Option A. 7 chunks of information.

Option B. 4 chunks of information.

Option C. 12 chunks of information.

Correct Answer is. 7 chunks of information.

Explanation. CAP 715 Ch.2 Para.4.5.5 Short term memory (aka working memory) is also known as the 7 +/- 2 memory.

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Question Number. 50. The retina is situated.

Option A. behind the cornea with the lens.

Option B. in front of the cornea.

Option C. at the back of the eye with the optic nerve.

Correct Answer is. at the back of the eye with the optic nerve.

Explanation. CAP 715 Ch.2 Para.2.1.

Explanation. CAP 715 Ch.2 Para.4.5.7 - 8.

Question Number. 51. Motor programme refers to.

Option A. motivational computer software.

Option B. a task that has been carried out so many times that it becomes automatic.

Option C. a task that becomes programmed into short term memory.

Correct Answer is. a task that has been carried out so many times that it becomes automatic.

Explanation. CAP 715 Ch.2 Para.4.6.

Question Number. 54. How many things can be stored in the short term memory?.

Option A. 0 - 5.

Option B. 9 - 15.

Option C. No limit.

Correct Answer is. 9 - 15.

Explanation. CAP 715 Ch.2 Para.4.5.5 7+/-2 makes 5 or 9, but b is considered correct due to memory enhancement techniques (grouping).

Question Number. 52. Memory which can be influenced by a persons expectations of what should have happened is.

Option A. echoic.

Option B. semantic.

Option C. episodic.

Correct Answer is. episodic.

Explanation. CAP 715 Ch.2 Para.4.5.8.

Question Number. 55. In the eye, the cones are used mainly in.

Option A. bright light to give fine detail.

Option B. bright light levels and they give poor colour vision.

Option C. low light levels and they give poor colour vision.

Correct Answer is. bright light to give fine detail.

Explanation. CAP 715 Ch.2 Para.2.5.1.

Question Number. 53. Information in the long term memory.

Option A. is easily transferred to the short term memory.

Option B. is easily lost.

Option C. is only available under hypnosis.

Correct Answer is. is easily lost.

Question Number. 56. A person suffering from presbyopia would normally.

Option A. wear spectacles when reading or carrying out close detail work.

Option B. have defective colour vision and not be allowed to carry out maintenance work on cable looms.

Option C. be short sighted and need to wear spectacles to see objects more than 30 cm away.

Correct Answer is. wear spectacles when reading or carrying out close detail work.

Explanation. CAP 715 Ch.2 Para.2.7.4.

Question Number. 57. Noise signals are carried to the brain by the.

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Option A. sensory nerve.

Option B. auditory nerve.

Option C. Eustachian nerve.

Correct Answer is. auditory nerve.

Explanation. CAP 715 Ch.2 Para.3.4.

Question Number. 58. Poking sharp objects into the ear should be avoided as it is likely to result in.

Option A. tinnitus ringing.

Option B. conductive hearing loss.

Option C. tympanic membrane perforation.

Correct Answer is. tympanic membrane perforation.

Explanation. Tympanic membrane is the technical name for the ear drum.

Question Number. 59. Attention Getters are designed to.

Option A. to gain the operators attention whilst allowing them to continue with the task in hand.

Option B. to make the operator focus his/her attention fully on the task in hand.

Option C. to get the operators full attention.

Correct Answer is. to get the operators full attention.

Explanation. Attention Getters are used in advertisements and posters etc to grab the operators full attention.

Question Number. 60. At what maximum frequency does the human ear hear?.

Option A. 16 kHz.

Option B. 8 kHz.

Option C. 20 kHz.

Correct Answer is. 20 kHz.

Explanation. CAP 715 Ch.2 Para.3.5.1.

Question Number. 61. Motor programmes.

Option A. are behaviour subroutines.

Option B. require conscious thought to engage.

Option C. are stored as working rules in long term memory.

Correct Answer is. are stored as working rules in long term memory.

Explanation. CAP 715 Ch.4 para 4.6.

Question Number. 62. The pupil of the eye grows smaller.

Option A. in condition of reduced light.

Option B. to focus the fovea.

Option C. in condition of increased light.

Correct Answer is. in condition of increased light.

Explanation. CAP 715 Ch.2 para 2.3.

Question Number. 63. Conductive deafness can be caused by damage to the.

Option A. cochlea.

Option B. otoliths.

Option C. semi circular canals.

Correct Answer is. cochlea.

Explanation. Nil.

http://www.encyclopedia.com/html/section/deafness_ConductiveDeafness.asp

Question Number. 64. Detail is best sensed by the _____ and movement best sensed by the _____.

Option A. the periphery and the periphery.

Option B. the periphery and fovea.

Option C. the fovea and periphery.

Correct Answer is. the fovea and periphery.

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Explanation. CAP 715 Ch.2 para 2.5.

Question Number. 65. If a person is colour blind, which colours would be most difficult to see?.

Option A. Red and green.

Option B. Blue and red.

Option C. Yellow and red.

Correct Answer is. Red and green.

Explanation. CAP 715 Ch.2 para 2.11.2.

Explanation. Nil.

<http://www.sirinet.net/~jgjohnso/respiratory.html>

Question Number. 69. The most common cause of myopia is.

Option A. weak accommodation.

Option B. a shortened eyeball.

Option C. an elongated eyeball.

Correct Answer is. an elongated eyeball.

Explanation. CAP 715 Ch.2 para 2.7.2.

Question Number. 66. Myopia is _____ and a _____ lens is needed to correct it.

Option A. long sightedness and concave.

Option B. short sightedness and convex.

Option C. short sightedness and concave.

Correct Answer is. short sightedness and concave.

Explanation. CAP 715 Ch.2 para 2.7.2.

Question Number. 67. The Otoliths detect.

Option A. angular acceleration.

Option B. linear acceleration.

Option C. both angular and linear acceleration.

Correct Answer is. linear acceleration.

Explanation. Nil.

<http://www.tchain.com/otoneurology/orders/bppv/otoliths.html#orientation>

Question Number. 68. The nose.

Option A. filters the air into the lungs.

Option B. filters, warms and moistens the air into the lungs.

Option C. filters the air into the lungs.

Correct Answer is. filters, warms and moistens the air into the lungs.