AME CET English & General Awareness

Sample Paper – 8

Duration: 30 Minutes **Maximum Marks: 120**

Instructions

- This paper contains **30** Multiple Choice Questions (Single Correct Answer), modelled on the combined **English** (Q1–15) and **General Awareness** (Q16–30) sections of the **AME CET** entrance.
- Each correct answer carries **+4 marks**. Each wrong answer carries -1 **mark**. Unattempted questions carry **0 marks**.
- Only **one** option is correct per question. Choose carefully.
- The General Awareness section emphasises **aviation fundamentals, civil-aviation regulation, and basic science** relevant to an Aircraft Maintenance Engineer.
- Use of mobile phones, calculators, or any electronic gadget is strictly prohibited.

Part A: English

Q1. Choose the word that is most nearly the **SYNONYM** of the word in capitals: **AMPLE**

(A) Meagre

(B) Narrow

(C) Sufficient

(D) Costly

Q2. Choose the word that is most nearly the **ANTONYM** of the word in capitals: **RIGID**

(A) Stiff

(B) Flexible

(C) Solid

(D) Firm

Q3. Fill in the blank with the correct preposition: "He is deeply interested _____ aviation."

(A) on

(B) for

(C) to

(D) in

Q4. Identify the part of the sentence that contains an error. If there is no error, mark (D).
Neither of (A) *the two engines* (B) *are working today.* (C) *No error* (D)

(A) Neither of

(B) the two engines

(C) are working today

(D) No error

Q5. Choose the grammatically **correct** sentence:

(A) Fewer passengers boarded the early-morning flight today.

(B) Less passengers boarded the early-morning flight today.

(C) Fewer passenger boarded the early-morning flight today.

(D) Less passenger boarded the early-morning flight today.

Q6. Choose the single word/phrase for: "A person who directs the movement of aircraft on the ground and in nearby airspace."

(A) Navigator

(B) Flight attendant

(C) Ground engineer

(D) Air traffic controller

Q7. What does the idiom "**burn the midnight oil**" mean?

(A) To waste fuel carelessly

(B) To work or study late into the night

(C) To start a fire by accident

(D) To finish a task very quickly

Q8. Fill in the blank with the most appropriate word: "The pilot performed a smooth banking _____ to align the aircraft with the runway."

(A) monument

(B) miniature

(C) manoeuvre

(D) monogram

Q9. Choose the correct **passive voice** form of: "The crew is loading the cargo."

(A) The cargo is being loaded by the crew.

(B) The cargo is loaded by the crew.

(C) The cargo was being loaded by the crew.

(D) The cargo has been loaded by the crew.

Q10. Choose the correct **indirect (reported) speech** form of: She said, "I bought a new car yesterday."

(A) She said that she bought a new car yesterday.

(B) She said that she had bought a new car the previous day.

(C) She said that she has bought a new car the previous day.

(D) She said that I had bought a new car yesterday.

Q11. Read the passage and answer Questions 11 and 12.

Every flight begins long before the engines start. A pre-flight inspection is carried out in which the aircraft maintenance engineer walks around the aircraft, examines the control surfaces, checks tyre pressure, and looks for leaks or loose fasteners. Each item checked is entered into the maintenance logbook, a permanent written record that travels with the aircraft. Only after all the required checks are complete does the engineer sign the certificate of release to service, formally declaring the aircraft fit to fly. This certification is a legal responsibility, and no aircraft may take off until it has been issued.

Q11. According to the passage, what must happen before an aircraft is allowed to take off?

(A) The passengers must board first.

(B) The engineer must sign the certificate of release to service.

(C) The fuel tanks must be emptied.

(D) The logbook must be destroyed.

Q12. (Based on the passage above.) The maintenance logbook is described as:

(A) a temporary note kept only for one flight

(B) a record of passenger details

(C) a manual written by the manufacturer

(D) a permanent written record that travels with the aircraft

Q13. Fill in the blank with the correct verb: "The number of passengers _____ rising every year."

(A) are

(B) have been

(C) is

(D) were

Q14. Fill in the blank with the correct verb form: "If the weather _____ clear, the flight will depart on time."

(A) will be

(B) was

(C) would be

(D) is

Q15. Choose the **correctly spelled** word:

(A) Pneumatic

(B) Numatic

(C) Pnuematic

(D) Pneamatic

Part B: General Awareness

Q16. In aviation, **APU** stands for:

(A) Aircraft Pressure Unit

(B) Automatic Pilot Unit

(C) Air Pump Unit

(D) Auxiliary Power Unit

Q17. The global standard-setting body of the United Nations that frames the rules and standards for international civil aviation is the:

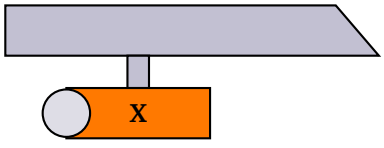
(A) IATA (International Air Transport Association)

(B) ICAO (International Civil Aviation Organization)

(C) WHO (World Health Organization)

(D) DGCA (Directorate General of Civil Aviation)

Q18. In the diagram below, the pod marked **X** slung beneath the wing of the aircraft houses an important component. This component is the:



(Engine pod under the wing)

(A) Fuel tank only

(B) Landing gear bay

(C) Jet (turbofan) engine

(D) Cargo hold

Q19. The first manned hot-air balloon flight, made in 1783 in France, is credited to:

(A) the Montgolfier brothers

(B) the Wright brothers

(C) Louis Blériot

(D) Charles Lindbergh

Q20. The Indian public-sector company that designs and builds the **Tejas** fighter and the **Dhruv** helicopter is:

(A) ISRO

(B) DRDO

(C) HAL (Hindustan Aeronautics Limited)

(D) BEL (Bharat Electronics Limited)

Q21. The cockpit instrument that shows how much fuel remains in the aircraft's tanks is the:

(A) Altimeter

(B) Fuel gauge

(C) Tachometer

(D) Compass

Q22. A wing is shaped so that air moves faster over its curved upper surface than under it, creating a pressure difference between the two surfaces. This pressure difference directly produces:

(A) Drag

(B) Thrust

(C) Weight

(D) Lift

Q23. The Wright brothers made the world's first powered aeroplane flight in 1903 at Kitty Hawk, which lies in the United States state of:

(A) North Carolina

(B) California

(C) Texas

(D) Ohio

Q24. Designers work hard to reduce the drag on an aircraft. Reducing drag mainly improves the aircraft's:

(A) weight

(B) wingspan

(C) fuel efficiency and range

(D) cabin pressure

Q25. Carbon-fibre reinforced polymer (CFRP) is increasingly used in modern aircraft mainly because it offers a high:

(A) electrical conductivity

(B) strength-to-weight ratio

(C) density

(D) melting point

Q26. The emergency oxygen masks above passenger seats automatically drop down when the cabin air pressure:

(A) falls below a safe level

(B) rises too high

(C) stays exactly normal

(D) becomes too humid

Q27. **UAV**, a category of aircraft flown without a human pilot on board, stands for:

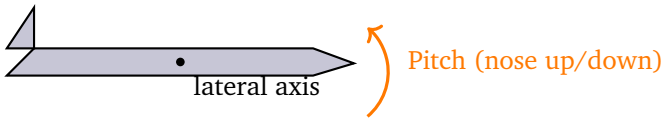
(A) Universal Aviation Vehicle

(B) Ultra Aerial Vessel

(C) United Air Vehicle

(D) Unmanned Aerial Vehicle

Q28. The figure shows an aircraft whose nose moves up and down in a see-saw motion. This nose-up/nose-down motion is called **pitch**, and it occurs about the:



(Aircraft, side view)

(A) longitudinal axis

(B) vertical axis

(C) lateral axis

(D) central axis

Q29. The SI unit of **temperature**, used for example in expressing engine and exhaust-gas temperatures, is the:

(A) Celsius

(B) Kelvin

(C) Newton

(D) Pascal

Q30. Modern turbofan engines are generally quieter and more fuel-efficient than older turbojets mainly because:

(A) a large bypass fan moves a great mass of air at relatively low speed

(B) they burn no fuel at all

(C) they have no moving parts

(D) they work only on the ground

Detailed Solutions

Q1.

Solution

Concept — Synonyms: A synonym is a word that has the same or nearly the same meaning as another word.

Step 1 — Meaning of the key word: "Ample" means enough or more than enough for a particular purpose; adequate in amount.

Step 2 — Match the option: Among the choices, "Sufficient" carries exactly this sense of being enough for the need.

Why other options are wrong:

- Option A (Meagre): Means very little or inadequate — the opposite of ample.
- Option B (Narrow): Means limited in width or extent; not about quantity being enough.
- Option D (Costly): Means expensive; unrelated to the idea of amount being sufficient.

Final Answer: AMPLE $\approx$ Sufficient $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q1

Q2.

Solution

Concept — Antonyms: An antonym is a word opposite in meaning to another word.

Step 1 — Meaning of the key word: "Rigid" means stiff and unable to bend; not able to be changed easily.

Step 2 — Find the opposite: The opposite of stiff and unbending is "Flexible," which means able to bend or adapt easily.

Why other options are wrong:

- Option A (Stiff): A synonym of rigid, not an antonym.
- Option C (Solid): Suggests firmness and hardness, closer to rigid than its opposite.
- Option D (Firm): Means steady and unyielding, again a synonym of rigid.

Final Answer: RIGID $\leftrightarrow$ Flexible $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q2

Q3.

Solution

Concept — Fixed preposition with an adjective: Certain adjectives are always followed by a particular preposition. The adjective "interested" is always followed by "in."

Step 1 — Identify the adjective: The key word in the sentence is "interested," describing the person's attitude toward aviation.

Step 2 — Apply the fixed collocation: The standard collocation is "interested in (something)," so the correct preposition is "in."

Why other options are wrong:

- Option A (on): We say "keen on," but not "interested on."
- Option B (for): "Interested for" is not a valid English collocation.
- Option C (to): "Interested to" is used only before a verb (e.g. "interested to know"), not before a noun like "aviation."

Final Answer: interested in aviation $\Rightarrow$ D

Answer: (D) Go Back to Q3

Q4.

Solution

Concept — Subject–verb agreement with "neither of": The expression "neither of…" is treated as *singular*, so it takes a singular verb, even though the noun that follows ("engines") is plural.

Step 1 — Locate the verb: The verb is "are working," which is plural.

Step 2 — Apply the rule: Because "neither of the two engines" is singular, the verb must be "is working," not "are working." The error therefore lies in part (C).

Why other options are wrong:

- Option A (Neither of): This is the correct beginning of the construction.
- Option B (the two engines): A correct noun phrase; "neither of" may correctly take "of the two engines."
- Option D (No error): Incorrect, because part (C) does contain a clear agreement error.

Final Answer: The error is "are working" (should be "is working") $\Rightarrow$ C

Answer: (C) Go Back to Q4

Q5.

Solution

Concept — "Fewer" vs "less" and countable nouns: "Fewer" is used with countable plural nouns; "less" is used with uncountable nouns. "Passengers" is a countable plural noun.

Step 1 — Decide fewer or less: Because passengers can be counted, the correct quantifier is "fewer," not "less."

Step 2 — Check the noun form: "Fewer" must be followed by the plural noun "passengers," giving "Fewer passengers."

Why other options are wrong:

- Option B (Less passengers): "Less" is wrong with a countable plural noun.
- Option C (Fewer passenger): "Fewer" must take the plural "passengers," not the singular "passenger."
- Option D (Less passenger): Wrong on both counts — wrong quantifier and wrong singular noun.

Final Answer: "Fewer passengers boarded the early-morning flight today." $\Rightarrow$ A

Answer: (A) Go Back to Q5

Q6.

Solution

Concept — One-word (or single-term) substitution: A precise term can replace a longer descriptive phrase.

Step 1 — Read the definition: "A person who directs the movement of aircraft on the ground and in nearby airspace" describes the official who keeps aircraft safely separated during taxi, take-off, and landing.

Step 2 — Select the term: That person is an "Air traffic controller."

Why other options are wrong:

- Option A (Navigator): Plots the route on board the aircraft; does not direct other aircraft from the ground.

- Option B (Flight attendant): Looks after passenger comfort and safety in the cabin.
- Option C (Ground engineer): Maintains and services aircraft, but does not direct their movement.

Final Answer: Air traffic controller $\Rightarrow$ D

Answer: (D) Go Back to Q6

Q7.

Solution

Concept — Idioms: An idiom is a fixed expression whose meaning cannot be guessed from the literal words.

Step 1 — Recall the idiom: "Burn the midnight oil" comes from the old practice of working by oil-lamp light late at night.

Step 2 — Match the meaning: It means "to work or study late into the night."

Why other options are wrong:

- Option A (waste fuel carelessly): A literal misreading of "oil"; not the idiom's meaning.
- Option C (start a fire by accident): Confuses the figurative "burn" with a real fire.
- Option D (finish a task very quickly): Unrelated; the idiom stresses long late-night effort, not speed.

Final Answer: burn the midnight oil = work/study late into the night $\Rightarrow$ B

Answer: (B) Go Back to Q7

Q8.

Solution

Concept — Vocabulary in context: The correct word must fit both the grammar and the meaning of the sentence.

Step 1 — Understand the context: A "banking ___" performed to align with the runway is a deliberate, planned movement of the aircraft. The word for such a movement is "manoeuvre."

Step 2 — Select the word: "A smooth banking manoeuvre" is the natural, mean-

ingful phrase.

Why other options are wrong:

- Option A (monument): A statue or memorial structure; meaningless here.
- Option B (miniature): A very small copy of something; does not fit.
- Option D (monogram): A design made of initials; unrelated to flight movement.

Final Answer: a banking manoeuvre $\Rightarrow$ C

Answer: (C) Go Back to Q8

Q9.

Solution

Concept — Active to passive (present continuous): In the passive of a present-continuous sentence, the object becomes the subject and the verb becomes "is/are being + past participle," with the original subject introduced by "by."

Step 1 — Identify the parts: Subject = "the crew," verb = "is loading," object = "the cargo."

Step 2 — Build the passive: Object first: "The cargo" + "is being loaded" (present continuous passive) + "by the crew."

Why other options are wrong:

- Option B (is loaded): Simple-present passive; loses the "continuous (being done now)" sense.
- Option C (was being loaded): Past-continuous passive; the original sentence is present, not past.
- Option D (has been loaded): Present-perfect passive; shows a completed action, not an ongoing one.

Final Answer: "The cargo is being loaded by the crew." $\Rightarrow$ A

Answer: (A) Go Back to Q9

Q10.

Solution

Concept — Direct to indirect speech: When the reporting verb is past ("said"), a simple-past statement shifts back to the past perfect, and time words change ("yesterday" becomes "the previous day").

Step 1 — Shift the tense: "I bought a new car" (simple past) becomes "she had bought a new car" (past perfect).

Step 2 — Adjust the time word and pronoun: "Yesterday" becomes "the previous day," and "I" (the speaker, She) becomes "she."

Why other options are wrong:

- Option A (bought. . . yesterday): Fails to back-shift the tense and keeps "yesterday."
- Option C (has bought): Present perfect; the required back-shift is to past perfect.
- Option D (I had bought): Wrongly keeps the first-person pronoun "I."

Final Answer: "She said that she had bought a new car the previous day." $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q10

Q11.

Solution

Concept — Reading comprehension (locating a stated fact): The answer must come directly from what the passage says.

Step 1 — Find the relevant line: The passage states: "Only after all the required checks are complete does the engineer sign the certificate of release to service. . . no aircraft may take off until it has been issued."

Step 2 — Match to an option: This directly supports "The engineer must sign the certificate of release to service."

Why other options are wrong:

- Option A (passengers must board first): The passage discusses inspection and certification, not boarding order.
- Option C (fuel tanks must be emptied): Never mentioned; emptying fuel would prevent flight.
- Option D (logbook destroyed): The passage calls the logbook "a permanent

written record," so it is kept, not destroyed.

Final Answer: the engineer must sign the certificate of release to service ⇒ B

Answer: (B) Go Back to Q11

Q12.

Solution

Concept — Reading comprehension (detail recall): Choose the option that restates the passage accurately.

Step 1 — Find the relevant line: The passage says each item checked is entered into "the maintenance logbook, a permanent written record that travels with the aircraft."

Step 2 — Match to an option: Option D repeats this description exactly.

Why other options are wrong:

- Option A (temporary, one flight): Contradicts "permanent."
- Option B (passenger details): The logbook records maintenance checks, not passengers.
- Option C (manual by the manufacturer): A logbook is a running record of work done, not the manufacturer's manual.

Final Answer: a permanent written record that travels with the aircraft ⇒ D

Answer: (D) Go Back to Q12

Q13.

Solution

Concept — "The number of" takes a singular verb: The phrase "the number of. . . " is singular, because the grammatical subject is "the number" (a single total), not "passengers."

Step 1 — Identify the true subject: The subject is "the number," which is singular, even though "passengers" is plural.

Step 2 — Choose the verb: A singular subject takes the singular verb "is," giving "The number of passengers is rising."

Why other options are wrong:

- Option A (are): Plural; wrongly agrees with "passengers" instead of "the number."
- Option B (have been): Plural present-perfect; does not agree with the singular "number."
- Option D (were): Plural and past tense; both wrong here.

Final Answer: "The number of passengers is rising every year." $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept — First conditional: In the first (real future) conditional, the "if" clause uses the *simple present* tense, while the main clause uses "will + base verb."

Step 1 — Spot the structure: The main clause is "the flight will depart on time," which is the "will" part of a first conditional.

Step 2 — Apply the rule to the "if" clause: The "if" clause must take the simple present: "If the weather is clear."

Why other options are wrong:

- Option A (will be): We do not use "will" inside the "if" clause of a first conditional.
- Option B (was): Past tense; this would form a second (unreal) conditional, which does not fit "will depart."
- Option C (would be): "Would" belongs to the main clause of an unreal conditional, not the "if" clause here.

Final Answer: "If the weather is clear..." $\Rightarrow$ D

Answer: (D) Go Back to Q14

Q15.

Solution

Concept — Correct spelling: Recognise the standard spelling of a commonly misspelled technical word.

Step 1 — Recall the correct form: The word for systems driven by compressed air is spelled **pneumatic** — it begins with a silent "p," then "neu."

Step 2 — Eliminate the misspellings: Only option A matches the dictionary spelling, "pneumatic."

Why other options are wrong:

- Option B (Numatic): Drops the silent "p" entirely.
- Option C (Pnuematic): Swaps the order of "eu" to "ue."
- Option D (Pneamatic): Uses "ea" instead of the correct "eu."

Final Answer: Pneumatic $\Rightarrow$ A

Answer: (A) Go Back to Q15

Q16.

Solution

Concept — Aircraft systems abbreviations: An AME must know the standard names of on-board systems.

Step 1 — Expand the abbreviation: APU stands for **Auxiliary Power Unit** — a small turbine engine, usually in the tail, that supplies electrical power and compressed air while the main engines are off.

Step 2 — Confirm its role: The APU lets the aircraft run its systems and start its main engines without external ground power.

Why other options are wrong:

- Option A (Aircraft Pressure Unit): Not a recognised term.
- Option B (Automatic Pilot Unit): The autopilot is a separate system, not the APU.
- Option C (Air Pump Unit): An invented expansion; not the standard meaning.

Final Answer: Auxiliary Power Unit $\Rightarrow$ D

Answer: (D) Go Back to Q16

Q17.

Solution

Concept — International aviation bodies: Global standards for civil aviation are set by a single UN agency.

Step 1 — Identify the body: The **ICAO (International Civil Aviation Organization)** is the United Nations agency that frames the standards and recommended practices for international civil aviation.

Step 2 — Confirm its scope: ICAO standardises matters such as safety, navigation, and the phonetic alphabet used worldwide.

Why other options are wrong:

- Option A (IATA): A trade association of airlines dealing with commercial matters like fares, not a UN standard-setting body.
- Option C (WHO): The UN health agency, unrelated to aviation rules.
- Option D (DGCA): India's national regulator, not the global UN body.

Final Answer: ICAO $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q17

Q18.

Solution

Concept — Engine installation on a jet aircraft: On most modern airliners the engines are carried in pods (nacelles) slung beneath the wings on pylons.

Step 1 — Locate the marked pod: The mark X is on the rounded pod hanging under the wing, with an air intake at its front — the classic position of an underwing engine.

Step 2 — Identify the component: This pod houses the **jet (turbofan) engine**, which draws in air, burns fuel, and expels exhaust to produce thrust.

Why other options are wrong:

- Option A (Fuel tank only): Fuel is stored mainly inside the wing structure, not in this pod.
- Option B (Landing gear bay): The landing gear retracts into the fuselage/wing root, not the engine nacelle.
- Option D (Cargo hold): Cargo is carried in the lower fuselage, not in a wing-mounted pod.

Final Answer: The under-wing pod houses the jet (turbofan) engine $\Rightarrow$ C

Answer: (C) Go Back to Q18

Q19.

Solution

Concept — Early history of flight: The first manned flight came from lighter-than-air balloons, well before powered aeroplanes.

Step 1 — Recall the event: In 1783, in France, the **Montgolfier brothers** (Joseph and Étienne) launched the first manned hot-air balloon flight.

Step 2 — Confirm the credit: Their balloon used heated air to rise, marking the start of human flight.

Why other options are wrong:

- Option B (Wright brothers): Made the first powered aeroplane flight in 1903, not a balloon in 1783.
- Option C (Blériot): First flew across the English Channel by aeroplane in 1909.
- Option D (Lindbergh): Made the first solo non-stop transatlantic flight in 1927.

Final Answer: the Montgolfier brothers $\Rightarrow$ A

Answer: (A) Go Back to Q19

Q20.

Solution

Concept — Indian aerospace industry: India's main public-sector aircraft manufacturer builds both fixed-wing and rotary-wing aircraft.

Step 1 — Identify the company: HAL (Hindustan Aeronautics Limited) designs and manufactures the Tejas light combat aircraft and the Dhruv (ALH) helicopter.

Step 2 — Confirm: HAL, headquartered in Bengaluru, is India's principal aircraft-building public-sector undertaking.

Why other options are wrong:

- Option A (ISRO): The space research organisation; it builds satellites and launch vehicles, not the Tejas.

- Option B (DRDO): Carries out defence research and design but does not mass-produce these aircraft itself.
- Option D (BEL): Makes electronics and defence equipment, not the aircraft airframes.

Final Answer: HAL (Hindustan Aeronautics Limited) ⇒ C

Answer: (C) Go Back to Q20

Q21.

Solution

Concept — Flight instruments: Each cockpit instrument measures one specific quantity.

Step 1 — Match instrument to quantity: The **fuel gauge** indicates the quantity of fuel remaining in the aircraft's tanks.

Step 2 — Confirm: It lets the crew monitor fuel and plan the flight safely.

Why other options are wrong:

- Option A (Altimeter): Measures altitude (height), not fuel.
- Option C (Tachometer): Measures engine speed in RPM.
- Option D (Compass): Shows heading/direction, not fuel quantity.

Final Answer: Fuel gauge ⇒ B

Answer: (B) Go Back to Q21

Q22.

Solution

Concept — How a wing generates lift: Air flows faster over the curved upper surface of a wing than under it. By Bernoulli's principle, faster air has lower pressure, so the pressure below the wing is higher than above.

Step 1 — Identify the result of the pressure difference: A higher pressure below and lower pressure above push the wing upward.

Step 2 — Name the force: This net upward force produced by the pressure difference is **lift**.

Why other options are wrong:

- Option A (Drag): Acts backward, resisting motion through the air; not produced by this up/down pressure difference.
- Option B (Thrust): Produced by the engines, not by the wing's pressure difference.
- Option C (Weight): The downward pull of gravity; it is what lift must overcome, not what the pressure difference creates.

Final Answer: The pressure difference produces lift $\Rightarrow$ D

Answer: (D) Go Back to Q22

Q23.

Solution

Concept — Landmark of powered flight: The site of the Wright brothers' first flight is a well-known geographical fact.

Step 1 — Recall the location: The first powered flight on 17 December 1903 took place at Kitty Hawk, in the state of **North Carolina**, USA.

Step 2 — Confirm: Kitty Hawk's steady winds and soft sand dunes made it a suitable test site.

Why other options are wrong:

- Option B (California): A west-coast state; not the flight site.
- Option C (Texas): Not associated with the 1903 flight.
- Option D (Ohio): The Wright brothers lived and worked in Dayton, Ohio, but the flight itself was at Kitty Hawk, North Carolina.

Final Answer: North Carolina $\Rightarrow$ A

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — Drag and aircraft performance: Drag is the backward force resisting an aircraft's motion through the air. The engines must produce thrust to overcome it, which burns fuel.

Step 1 — Link drag to fuel use: Less drag means less thrust is needed to maintain speed, so the engines burn less fuel.

Step 2 — State the benefit: Reducing drag therefore improves the aircraft's **fuel efficiency and range**.

Why other options are wrong:

- Option A (weight): Drag is a force of air resistance; reducing it does not change the aircraft's weight.
- Option B (wingspan): Wingspan is a fixed design dimension, not something drag reduction changes.
- Option D (cabin pressure): Cabin pressure is controlled by the pressurisation system, unrelated to drag.

Final Answer: fuel efficiency and range $\Rightarrow$ C

Answer: (C) Go Back to Q24

Q25.

Solution

Concept — Composite materials in aircraft: Carbon-fibre reinforced polymer (CFRP) combines carbon fibres in a plastic matrix.

Step 1 — Identify the key property: CFRP is very strong yet very light, so it has a high **strength-to-weight ratio**.

Step 2 — Apply to aircraft: A high strength-to-weight ratio lets designers build strong structures that weigh less, saving fuel.

Why other options are wrong:

- Option A (electrical conductivity): CFRP conducts less well than metal; this is a drawback, not the reason it is chosen.
- Option C (density): CFRP is valued for being *low* in density (light), not high.
- Option D (melting point): It is a polymer composite and is not chosen for a high melting point.

Final Answer: strength-to-weight ratio $\Rightarrow$ B

Answer: (B) Go Back to Q25

Q26.

Solution

Concept — Emergency oxygen system: Passenger cabins are pressurised; if that pressure is lost, the air becomes too thin to breathe.

Step 1 — Identify the trigger: The oxygen masks drop automatically when the cabin air pressure **falls below a safe level**, for example during a loss of pressurisation.

Step 2 — Reason: At low cabin pressure there is too little oxygen, so the masks supply emergency oxygen to passengers.

Why other options are wrong:

- Option B (rises too high): High cabin pressure is not the danger that triggers the masks.
- Option C (stays exactly normal): If pressure is normal, no emergency oxygen is needed.
- Option D (becomes too humid): Humidity does not control the oxygen-mask release.

Final Answer: falls below a safe level $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q26

Q27.

Solution

Concept — Unmanned aircraft: Some aircraft are flown remotely or autonomously, with no pilot on board.

Step 1 — Expand the abbreviation: UAV stands for **Unmanned Aerial Vehicle** — commonly called a drone.

Step 2 — Confirm: A UAV is controlled from the ground or flies a pre-programmed route, used in survey, delivery, and defence.

Why other options are wrong:

- Option A (Universal Aviation Vehicle): Not a recognised term.
- Option B (Ultra Aerial Vessel): Invented expansion; "vessel" is not used here.
- Option C (United Air Vehicle): Incorrect expansion.

Final Answer: Unmanned Aerial Vehicle $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q27

Q28.

Solution

Concept — The three axes of aircraft rotation: An aircraft rotates about three perpendicular axes through its centre of gravity — longitudinal (roll), lateral (pitch), and vertical (yaw).

Step 1 — Identify the motion: The figure shows the nose moving up and down — this is **pitch**.

Step 2 — Name the axis: Pitch is rotation about the **lateral axis**, the wingtip-to-wingtip axis, controlled by the elevators.

Why other options are wrong:

- Option A (longitudinal axis): The nose-to-tail axis; rotation about it is roll, not pitch.
- Option B (vertical axis): The up-down axis; rotation about it is yaw, not pitch.
- Option D (central axis): Not one of the three standard named axes of an aircraft.

Final Answer: lateral axis $\Rightarrow$ C

Answer: (C) Go Back to Q28

Q29.

Solution

Concept — SI units: Each physical quantity has a defined SI base or derived unit.

Step 1 — Recall the unit of temperature: The SI base unit of temperature is the **kelvin** (K).

Step 2 — Apply to engines: Exhaust-gas and engine temperatures can be expressed in kelvin, the absolute temperature scale.

Why other options are wrong:

- Option A (Celsius): A widely used temperature scale, but the SI base unit is the kelvin, not the degree Celsius.
- Option C (Newton): The SI unit of force, not temperature.

- Option D (Pascal): The SI unit of pressure, not temperature.

Final Answer: Kelvin $\Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

Concept — Turbofan vs turbojet: A turbofan has a large fan at the front that pushes much of the incoming air around the core engine (the bypass air), rather than through it.

Step 1 — Explain the bypass air: The big bypass fan moves a large mass of air at a relatively low speed, which is an efficient way to produce thrust.

Step 2 — Link to quietness and economy: Moving more air more slowly produces less jet noise and burns less fuel than the older turbojet, which expelled a thin, very fast, noisy jet.

Why other options are wrong:

- Option B (burn no fuel): False — turbofans still burn jet fuel in the core.
- Option C (no moving parts): False — they have compressors, turbines, and the fan, all rotating.
- Option D (work only on the ground): False — they are the main engines used in cruising flight.

Final Answer: a large bypass fan moves a great mass of air at relatively low speed $\Rightarrow$ A

Answer: (A) Go Back to Q30

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	B	3	D	4	C	5	A
6	D	7	B	8	C	9	A	10	B
11	B	12	D	13	C	14	D	15	A
16	D	17	B	18	C	19	A	20	C
21	B	22	D	23	A	24	C	25	B
26	A	27	D	28	C	29	B	30	A