AME CET English & General Awareness

Sample Paper – 1

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: **ABUNDANT**

(A) Scarce

(B) Plentiful

(C) Hollow

(D) Brief

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

(A) Kind

(B) Generous

(C) Gracious

(D) Cruel

Q3. Fill in the blank with the correct preposition: “She has been working at the hangar _____ 2015.”

(A) since

(B) for

(C) from

(D) by

Q4. Identify the part of the sentence that contains an error. If there is no error, mark (D).
The number of students (A) *in the training class* (B) *are increasing every year.* (C) *No error* (D)

(A) The number of students

(B) in the training class

(C) are increasing every year

(D) No error

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

(A) He don’t like working night shifts.

(B) He does not like working night shifts.

(C) He do not likes working night shifts.

(D) He not like working night shifts.

Q6. Choose the single word for the phrase: “A person who is trained to fly an aircraft.”

(A) Pilot

(B) Sailor

(C) Mariner

(D) Conductor

Q7. What does the idiom "**once in a blue moon**" mean?

(A) Very frequently

(B) During the night only

(C) Very rarely

(D) Without any cost

Q8. Fill in the blank with the most appropriate word: "Before every flight, the engineer carries out a thorough _____ of the engine and controls."

(A) injection

(B) inception

(C) intuition

(D) inspection

Q9. Choose the correct **passive voice** form of: "The engineer repairs the aircraft."

(A) The aircraft repairs the engineer.

(B) The aircraft is repaired by the engineer.

(C) The aircraft was repaired by the engineer.

(D) The aircraft has repaired by the engineer.

Q10. Choose the correct **indirect (reported) speech** form of: He said, "I am tired."

(A) He said that he was tired.

(B) He said that he is tired.

(C) He says that he was tired.

(D) He said that I was tired.

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

An aircraft maintenance engineer (AME) is responsible for ensuring that an aircraft is airworthy before every flight. The work involves inspecting engines, checking electrical and hydraulic systems, and certifying that all repairs meet the strict safety standards set by the regulator. Even a minor oversight can have serious consequences, so attention to detail is the single most important quality in this profession. AMEs work in teams, and every check they perform must be recorded in a logbook that becomes a permanent part of the aircraft's history.

Q11. According to the passage, the single most important quality for an AME is:

(A) physical strength

(B) speed of work

(C) attention to detail

(D) the ability to work alone

Q12. (Based on the passage above.) The logbook mentioned in the passage:

(A) is optional for routine flights

(B) records only the major repairs

(C) is destroyed after each flight

(D) becomes a permanent part of the aircraft's history

Q13. Fill in the blank with the correct verb: "Neither the pilot nor the engineers _____ available at the moment."

(A) is

(B) are

(C) was

(D) has been

Q14. Choose the correct verb forms to complete the sentence: "By the time we reached the airport, the plane ____ already _____."

(A) had ... departed

(B) has ... departed

(C) have ... departed

(D) was ... departed

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

(A) Maintainance

(B) Maintenence

(C) Maintenance

(D) Maintainence

Part B: General Awareness

Q16. In the context of the entrance test, **AME** stands for:

(A) Aircraft Mechanical Engineer

(B) Aircraft Maintenance Engineer

(C) Aviation Management Expert

(D) Air Mobility Engineer

Q17. The statutory regulatory body that oversees civil aviation safety, licensing, and airworthiness in India is the:

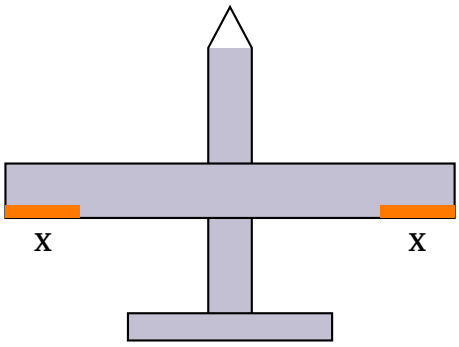
(A) DGCA (Directorate General of Civil Aviation)

(B) ISRO (Indian Space Research Organisation)

(C) RBI (Reserve Bank of India)

(D) SEBI (Securities and Exchange Board of India)

Q18. In the top-view diagram of the aircraft below, the hinged control surfaces marked **X** on the outer trailing edge of each wing are used to bank (roll) the aircraft. These surfaces are called:



(Aircraft, top view)

(A) Rudder

(B) Elevators

(C) Ailerons

(D) Spoilers

Q19. The first sustained, powered, and controlled aeroplane flight, made in 1903, is credited to:

(A) Louis Blériot

(B) the Montgolfier brothers

(C) Alberto Santos-Dumont

(D) the Wright brothers

Q20. India's first commercial airline, founded by J. R. D. Tata in 1932, was originally named:

(A) Tata Airlines

(B) Indian Airlines

(C) Air Deccan

(D) Vistara

Q21. The cockpit instrument used to measure an aircraft's **altitude** (height above mean sea level) is the:

(A) Tachometer

(B) Altimeter

(C) Ammeter

(D) Odometer

Q22. A jet engine pushes the aircraft forward by expelling exhaust gases backwards at high speed. This is a direct application of:

(A) Newton's first law of motion

(B) Archimedes' principle

(C) Newton's third law of motion

(D) Pascal's law

Q23. The headquarters of the International Civil Aviation Organization (ICAO), a specialised agency of the United Nations, is located in:

(A) Geneva

(B) Paris

(C) New York

(D) Montreal

Q24. The aerodynamic force that acts upward, opposite to the weight of an aircraft, and keeps it airborne is called:

(A) Thrust

(B) Lift

(C) Drag

(D) Torque

Q25. Which gas, making up about 21% of the Earth's atmosphere, is essential for the combustion of fuel inside a jet engine?

(A) Oxygen

(B) Nitrogen

(C) Carbon dioxide

(D) Hydrogen

Q26. The so-called "black box" of an aircraft, which records flight data and cockpit voices, is actually painted in which colour to make it easier to find after an accident?

(A) Jet black

(B) Silver grey

(C) Dark green

(D) Bright orange

Q27. **HAL**, India's major state-owned aerospace and defence company that designs and manufactures aircraft, stands for:

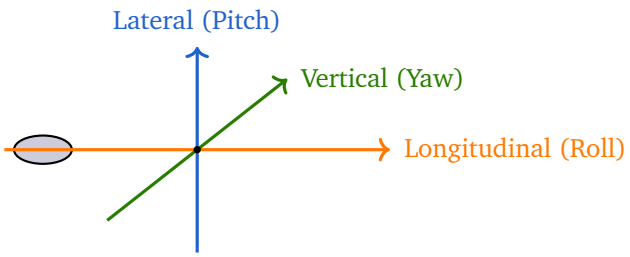
(A) Hindustan Air Limited

(B) Heavy Aircraft Limited

(C) Hindustan Aeronautics Limited

(D) Hindustan Avionics Limited

Q28. The figure shows the three axes of rotation of an aircraft passing through its centre of gravity. Rotation about the **longitudinal axis** (running from nose to tail), controlled by the ailerons, is known as:



(A) Pitch

(B) Roll

(C) Yaw

(D) Thrust

Q29. The SI unit of **force**, used when expressing the thrust produced by an aircraft engine, is the:

(A) Newton

(B) Joule

(C) Watt

(D) Pascal

Q30. Modern passenger aircraft cabins are pressurised mainly because, at high cruising altitudes, the outside air has:

(A) too much oxygen for breathing

(B) a dangerously high temperature

(C) very high humidity

(D) very low pressure and insufficient oxygen

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: "Abundant" means existing in large quantity; more than enough; plentiful.

Step 2 — Match the option: Among the choices, "Plentiful" carries exactly this sense of being available in great amounts.

Why other options are wrong:

- Option A (Scarce): The opposite of abundant — it means in short supply.
- Option C (Hollow): Means empty inside; unrelated to quantity.
- Option D (Brief): Means short in duration; unrelated to quantity.

Final Answer: ABUNDANT $\approx$ Plentiful $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) 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: "Benevolent" means kind, well-meaning, and generous toward others.

Step 2 — Find the opposite: The opposite of kind and well-meaning is "Cruel," which means causing pain or showing no kindness.

Why other options are wrong:

- Option A (Kind): A synonym, not an antonym.
- Option B (Generous): A synonym, not an antonym.
- Option C (Gracious): A synonym, not an antonym.

Final Answer: BENEVOLENT $\leftrightarrow$ Cruel $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q2

Q3.

Solution

Concept — Prepositions of time (since vs. for): "Since" is used with a *point* of time (a specific year, date, or moment); "for" is used with a *period* or duration of time.

Step 1 — Identify the time expression: "2015" is a specific point in time (a starting year), not a duration.

Step 2 — Choose the matching preposition: With a point of time in the present perfect continuous ("has been working"), the correct preposition is "since."

Why other options are wrong:

- Option B (for): Used with a duration, e.g. "for ten years," not a fixed year.
- Option C (from): Needs a matching "to"; "from. . . to" marks a range, and is not used with the present perfect here.
- Option D (by): Indicates a deadline ("by 2015"), which does not fit a continuing action.

Final Answer: since 2015 $\Rightarrow$ A

Answer: (A) Go Back to Q3

Q4.

Solution

Concept — Subject–verb agreement with "the number of": The phrase "the number of. . . " takes a *singular* verb, because the subject is "the number" (a single total), not "students."

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

Step 2 — Apply the rule: Since "the number of students" is singular, the verb must be "is increasing," not "are increasing." The error lies in part (C).

Why other options are wrong:

- Option A: "The number of students" is a correct singular subject phrase.
- Option B: "in the training class" is a correct prepositional phrase.
- Option D (No error): Incorrect, because part (C) does contain a clear agreement error.

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

Answer: (C) Go Back to Q4

Q5.

Solution

Concept — Use of "does/do" in the negative: For a third-person singular subject (he/she/it), the negative is formed with "does not" followed by the *base* form of the main verb.

Step 1 — Identify the subject: The subject "He" is third-person singular, so the auxiliary must be "does."

Step 2 — Apply the base-verb rule: After "does not," the main verb stays in its base form: "does not like."

Why other options are wrong:

- Option A (don't): "Don't" is used with I/you/we/they, not "he."
- Option C (do not likes): Wrong auxiliary and the main verb wrongly takes "-s."
- Option D (not like): Missing the auxiliary verb entirely.

Final Answer: "He does not like working night shifts." $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

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

Step 1 — Read the definition: "A person trained to fly an aircraft" describes someone who operates an aeroplane in flight.

Step 2 — Select the term: That person is a "Pilot."

Why other options are wrong:

- Option B (Sailor): Works on a ship at sea.
- Option C (Mariner): Also a seafarer, not an aviator.
- Option D (Conductor): Manages tickets on a train or bus, or leads an orchestra.

Final Answer: Pilot $\Rightarrow$ A

Answer: (A) 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: "Once in a blue moon" refers to something that happens extremely seldom (a genuine "blue moon" is a rare extra full moon).

Step 2 — Match the meaning: The closest meaning is "Very rarely."

Why other options are wrong:

- Option A (Very frequently): The opposite of the intended meaning.
- Option B (During the night only): A literal misreading of "moon."
- Option D (Without any cost): That is the idiom "free of charge," not this one.

Final Answer: once in a blue moon = very rarely $\Rightarrow$ C

Answer: (C) 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: Before a flight, an engineer formally examines the engine and controls. The act of examining is an "inspection."

Step 2 — Select the word: "Carries out a thorough inspection" is the natural and meaningful collocation.

Why other options are wrong:

- Option A (injection): Forcing fluid in (medical/mechanical), not an examination.
- Option B (inception): The beginning or start of something.
- Option C (intuition): An instinctive feeling, not a deliberate check.

Final Answer: a thorough inspection $\Rightarrow$ D

Answer: (D) Go Back to Q8

Q9.

Solution

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

Step 1 — Identify the parts: Subject = "the engineer," verb = "repairs," object = "the aircraft."

Step 2 — Build the passive: Object first: "The aircraft" + "is repaired" (present tense) + "by the engineer."

Why other options are wrong:

- Option A: Reverses the meaning (the aircraft repairing the engineer).
- Option C (was repaired): Past tense; the original sentence is present tense.
- Option D (has repaired): An active present-perfect form, not a passive.

Final Answer: "The aircraft is repaired by the engineer." $\Rightarrow$ B

Answer: (B) Go Back to Q9

Q10.

Solution

Concept — Direct to indirect speech: When the reporting verb is in the past ("said"), the present tense inside the quotation shifts one step back into the past, and first-person pronouns change to agree with the speaker.

Step 1 — Shift the tense: "I am tired" (present) becomes "he was tired" (past).

Step 2 — Adjust the pronoun and add "that": "I" refers to the speaker "He," so it becomes "he." The reported clause is joined with "that."

Why other options are wrong:

- Option B (is tired): Fails to back-shift the present tense.
- Option C (says): Changes the reporting verb to present, which is not required.
- Option D (I was tired): Wrongly keeps the first-person pronoun "I."

Final Answer: "He said that he was tired." $\Rightarrow$ A

Answer: (A) Go Back to Q10

Q11.

Solution

Concept — Reading comprehension (locating a stated fact): The answer must come directly from what the passage says, not from outside assumptions.

Step 1 — Find the relevant line: The passage states: "...attention to detail is the single most important quality in this profession."

Step 2 — Match to an option: This directly supports "attention to detail."

Why other options are wrong:

- Option A (physical strength): Never mentioned in the passage.
- Option B (speed of work): Not stated; the passage stresses care, not speed.
- Option D (working alone): The passage says AMEs "work in teams," contradicting this.

Final Answer: attention to detail $\Rightarrow$ C

Answer: (C) 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 states the logbook "becomes a permanent part of the aircraft's history."

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

Why other options are wrong:

- Option A (optional): The passage says "every check...must be recorded," so it is compulsory.
- Option B (only major repairs): The passage says "every check," not just major ones.
- Option C (destroyed after each flight): Contradicts "permanent."

Final Answer: becomes a permanent part of the aircraft's history $\Rightarrow$ D

Answer: (D) Go Back to Q12

Q13.

Solution

Concept — "Neither. . . nor" agreement: With "neither. . . nor," the verb agrees with the subject *nearer* to it (the proximity rule).

Step 1 — Identify the nearer subject: The subject closer to the verb is "the engineers," which is plural.

Step 2 — Choose the verb: A plural subject takes the plural verb "are."

Why other options are wrong:

- Option A (is): Singular; would be correct only if the nearer noun were singular.
- Option C (was): Singular and past tense; does not agree and changes the tense.
- Option D (has been): Singular present-perfect; does not agree with "engineers."

Final Answer: ". . . nor the engineers are available." $\Rightarrow$ B

Answer: (B) Go Back to Q13

Q14.

Solution

Concept — Past perfect for the earlier of two past actions: When two actions happen in the past, the one that happened *first* takes the past perfect ("had + past participle").

Step 1 — Order the two events: The plane departing happened *before* "we reached the airport."

Step 2 — Apply the tense: The earlier action uses "had departed"; with "already" placed between: "had already departed."

Why other options are wrong:

- Option B (has departed): Present perfect; cannot describe a completed past-before-past action.
- Option C (have departed): Wrong auxiliary for a singular subject and wrong tense.
- Option D (was departed): A faulty passive-like form; "depart" is intransitive here.

Final Answer: had already departed ⇒ A

Answer: (A) Go Back to Q14

Q15.

Solution

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

Step 1 — Recall the correct form: The noun from "maintain" is spelled **maintenance** (note: "mainten-" then "-ance," no "i" after "main").

Step 2 — Eliminate the misspellings: Only option C matches the dictionary spelling.

Why other options are wrong:

- Option A (Maintainance): Extra "ai" in the middle.
- Option B (Maintenence): Wrong vowel ("-ence" instead of "-ance").
- Option D (Maintainence): Combines both errors above.

Final Answer: Maintenance ⇒ C

Answer: (C) Go Back to Q15

Q16.

Solution

Concept — The AME profession: The entrance test prepares students for a licensed technical career in aviation.

Step 1 — Expand the abbreviation: AME stands for **Aircraft Maintenance Engineer** — the professional who inspects, services, and certifies aircraft as airworthy.

Step 2 — Confirm the role: This matches the licensing framework under the DGCA, which issues AME licences.

Why other options are wrong:

- Option A (Aircraft Mechanical Engineer): Not the official expansion; the field is broader than "mechanical."
- Option C (Aviation Management Expert): A management role, not a licensed maintenance role.
- Option D (Air Mobility Engineer): Not a recognised AME designation.

Final Answer: Aircraft Maintenance Engineer $\Rightarrow$ B

Answer: (B) Go Back to Q16

Q17.

Solution

Concept — Indian civil-aviation regulator: A national authority sets and enforces safety, licensing, and airworthiness rules.

Step 1 — Identify the body: The **DGCA (Directorate General of Civil Aviation)** regulates civil aviation in India, including AME licensing.

Step 2 — Confirm its scope: It is the authority that certifies aircraft, crews, and maintenance engineers.

Why other options are wrong:

- Option B (ISRO): The space research organisation, not a civil-aviation regulator.
- Option C (RBI): The central bank, regulating banking and currency.
- Option D (SEBI): The securities-market regulator.

Final Answer: DGCA $\Rightarrow$ A

Answer: (A) Go Back to Q17

Q18.

Solution

Concept — Primary flight control surfaces: An aircraft is controlled in roll, pitch, and yaw by movable surfaces on the wings and tail.

Step 1 — Locate the marked surfaces: The marks X are on the *outer trailing edge of each wing* — the standard position of the ailerons.

Step 2 — Identify their function: Ailerons move in opposite directions (one up, one down) to bank/roll the aircraft about its longitudinal axis.

Why other options are wrong:

- Option A (Rudder): On the vertical tail fin; controls yaw, not roll.
- Option B (Elevators): On the horizontal tail; control pitch.
- Option D (Spoilers): On the upper wing surface; reduce lift and act as air brakes, not the primary roll control shown.

Final Answer: The outer-wing trailing-edge surfaces are the ailerons $\Rightarrow$ C

Answer: (C) Go Back to Q18

Q19.

Solution

Concept — History of powered flight: The first heavier-than-air, engine-powered, controlled flight is a landmark of aviation history.

Step 1 — Recall the event: On 17 December 1903, at Kitty Hawk, the **Wright brothers** (Orville and Wilbur) flew the first powered, controlled aeroplane.

Step 2 — Confirm the credit: Their "Flyer" achieved sustained, controlled, powered flight for the first time.

Why other options are wrong:

- Option A (Blériot): First to fly across the English Channel (1909), later than 1903.
- Option B (Montgolfier brothers): Pioneers of the hot-air *balloon* (1783), not powered aeroplanes.
- Option C (Santos-Dumont): An aviation pioneer, but after the Wrights' 1903 flight.

Final Answer: the Wright brothers $\Rightarrow$ D

Answer: (D) Go Back to Q19

Q20.

Solution

Concept — Indian aviation history: India's commercial aviation began with a Tata venture in the 1930s.

Step 1 — Recall the airline: In 1932, J. R. D. Tata founded **Tata Airlines**, flying mail and passengers.

Step 2 — Note its later name: Tata Airlines was renamed *Air India* in 1946, but its original 1932 name was Tata Airlines.

Why other options are wrong:

- Option B (Indian Airlines): Formed in 1953 for domestic services, not the 1932 airline.

- Option C (Air Deccan): A low-cost carrier launched in 2003.
- Option D (Vistara): A Tata–Singapore Airlines joint venture launched in 2015.

Final Answer: Tata Airlines $\Rightarrow$ A

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Flight instruments: Each cockpit instrument measures a specific flight parameter.

Step 1 — Match instrument to quantity: The **altimeter** measures altitude (height above mean sea level), usually by sensing atmospheric pressure.

Step 2 — Confirm: "Alti-" (height) + "-meter" (measure) = altitude-measuring instrument.

Why other options are wrong:

- Option A (Tachometer): Measures engine/rotor speed in RPM.
- Option C (Ammeter): Measures electric current.
- Option D (Odometer): Measures distance travelled on the ground (vehicles), not altitude.

Final Answer: Altimeter $\Rightarrow$ B

Answer: (B) Go Back to Q21

Q22.

Solution

Concept — Newton's third law: For every action there is an equal and opposite reaction.

Step 1 — Identify action and reaction: The engine pushes exhaust gases backwards (action); the gases push the engine, and hence the aircraft, forwards (reaction).

Step 2 — Name the law: This action–reaction pair is precisely Newton's third law of motion.

Why other options are wrong:

- Option A (first law): Describes inertia, not thrust generation.
- Option B (Archimedes' principle): Buoyancy of fluids; relevant to ships/balloons, not jet thrust.
- Option D (Pascal's law): Transmission of pressure in fluids; used in hydraulics, not thrust.

Final Answer: Newton's third law of motion $\Rightarrow$ C

Answer: (C) Go Back to Q22

Q23.

Solution

Concept — International aviation bodies: The ICAO sets global standards for civil aviation.

Step 1 — Recall the headquarters: ICAO is headquartered in **Montreal**, Canada.

Step 2 — Confirm: It is a specialised agency of the United Nations established by the 1944 Chicago Convention.

Why other options are wrong:

- Option A (Geneva): Home to many UN bodies (e.g. WHO), but not ICAO.
- Option B (Paris): Headquarters of UNESCO, not ICAO.
- Option C (New York): UN General Headquarters, not ICAO.

Final Answer: Montreal $\Rightarrow$ D

Answer: (D) Go Back to Q23

Q24.

Solution

Concept — The four forces of flight: An aircraft in flight is acted on by lift, weight, thrust, and drag.

Step 1 — Match the description: The upward force opposing weight is **lift**, generated mainly by the wings.

Step 2 — Confirm the balance: In steady level flight, lift balances weight while thrust balances drag.

Why other options are wrong:

- Option A (Thrust): Acts forward (engine), opposing drag, not weight.
- Option C (Drag): Acts backward, opposing thrust.
- Option D (Torque): A turning effect, not one of the vertical balancing forces here.

Final Answer: Lift $\Rightarrow$ B

Answer: (B) Go Back to Q24

Q25.

Solution

Concept — Combustion needs oxygen: Fuel burns only in the presence of an oxidiser, normally atmospheric oxygen.

Step 1 — Recall atmospheric composition: Air is about 78% nitrogen and 21% **oxygen**; the 21% portion supports combustion.

Step 2 — Apply to the engine: A jet engine draws in air and uses its oxygen to burn the fuel in the combustion chamber.

Why other options are wrong:

- Option B (Nitrogen): Largely inert; it does not support combustion.
- Option C (Carbon dioxide): A product of combustion, often used to extinguish fire.
- Option D (Hydrogen): A fuel itself, and only a trace gas in the atmosphere.

Final Answer: Oxygen $\Rightarrow$ A

Answer: (A) Go Back to Q25

Q26.

Solution

Concept — Flight recorders: The "black box" (flight data recorder and cockpit voice recorder) is built to survive crashes and be found easily.

Step 1 — Correct the colour myth: Despite the name, the box is painted **bright orange** (often called "international orange") for high visibility during recovery.

Step 2 — Reason for the colour: Bright orange stands out among wreckage, water, and debris.

Why other options are wrong:

- Option A (Jet black): The popular name only; not the actual colour.
- Option B (Silver grey): Would blend with metal wreckage.
- Option C (Dark green): Hard to spot in vegetation or water.

Final Answer: Bright orange $\Rightarrow$ D

Answer: (D) Go Back to Q26

Q27.

Solution

Concept — Indian aerospace industry: A major public-sector company designs and builds aircraft in India.

Step 1 — Expand the abbreviation: HAL stands for **Hindustan Aeronautics Limited**, headquartered in Bengaluru.

Step 2 — Confirm its work: HAL manufactures military and civil aircraft, helicopters, and aero-engines.

Why other options are wrong:

- Option A (Hindustan Air Limited): Incorrect expansion.
- Option B (Heavy Aircraft Limited): Not the company's name.
- Option D (Hindustan Avionics Limited): "Avionics" is wrong; the correct word is "Aeronautics."

Final Answer: Hindustan Aeronautics Limited $\Rightarrow$ C

Answer: (C) Go Back to Q27

Q28.

Solution

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

Step 1 — Identify the longitudinal axis: The longitudinal axis runs from the nose to the tail (the orange arrow in the figure).

Step 2 — Name the motion: Rotation about this nose-to-tail axis, produced by the ailerons, is called **roll**.

Why other options are wrong:

- Option A (Pitch): Rotation about the lateral (wingtip-to-wingtip) axis, controlled by the elevators.
- Option C (Yaw): Rotation about the vertical axis, controlled by the rudder.
- Option D (Thrust): A force, not a rotation about an axis.

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

Answer: (B) Go Back to Q28

Q29.

Solution

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

Step 1 — Recall the unit of force: The SI unit of force is the **newton** (N), where $1\ \text{N} = 1\ \text{kg} \cdot \text{m/s}^2$.

Step 2 — Apply to thrust: Thrust is a force, so engine thrust is expressed in newtons (or kilonewtons).

Why other options are wrong:

- Option B (Joule): The SI unit of energy or work.
- Option C (Watt): The SI unit of power (rate of doing work).
- Option D (Pascal): The SI unit of pressure (force per unit area).

Final Answer: Newton $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q29

Q30.

Solution

Concept — Cabin pressurization: At high altitude the atmosphere becomes thin, so cabins are pressurised for passenger safety and comfort.

Step 1 — Describe the high-altitude air: At cruising altitudes (around 10–12 km), the outside air is at **very low pressure and contains too little oxygen** for normal breathing.

Step 2 — Reason for pressurization: Pumping in compressed, conditioned air keeps the cabin at a safe, breathable pressure equivalent to a much lower altitude.

Why other options are wrong:

- Option A (too much oxygen): False — there is too *little* oxygen at altitude.
- Option B (high temperature): The outside air at altitude is extremely cold, not hot.
- Option C (high humidity): High-altitude air is very dry, not humid.

Final Answer: very low pressure and insufficient oxygen $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q30

Answer Key

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