AME CET English & General Awareness

Sample Paper – 4

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: **LUCID**

(A) Confusing

(B) Dim

(C) Clear

(D) Twisted

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

(A) Climb

(B) Descend

(C) Rise

(D) Soar

Q3. Fill in the blank with the correct preposition: "Some new trainees are afraid _____ heights."

(A) from

(B) with

(C) about

(D) of

Q4. Identify the part of the sentence that contains an error. If there is no error, mark (D).
She is senior than me (A) *in the maintenance section* (B) *by almost two years.* (C) *No error* (D)

(A) She is senior than me

(B) in the maintenance section

(C) by almost two years

(D) No error

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

(A) The news are very encouraging.

(B) The news were very encouraging.

(C) The news is very encouraging.

(D) The news have been very encouraging.

Q6. Choose the single word for the phrase: "A large shed in which aircraft are housed and serviced."

(A) Garage

(B) Hangar

(C) Warehouse

(D) Terminal

Q7. What does the idiom "**hit the books**" mean?

(A) To study hard

(B) To throw something away

(C) To start a fight

(D) To close a library

Q8. Fill in the blank with the most appropriate word: "Before the test flight, the technician had to _____ the altimeter so that it would read the correct height."

(A) dismantle

(B) lubricate

(C) paint

(D) calibrate

Q9. Choose the correct **passive voice** form of: "They will inspect the aircraft tomorrow."

(A) The aircraft is inspected tomorrow.

(B) The aircraft will be inspected tomorrow.

(C) The aircraft will inspect tomorrow.

(D) The aircraft has been inspected tomorrow.

Q10. Choose the correct **indirect (reported) speech** form of: He said to me, "Where are you going?"

(A) He asked me where I am going.

(B) He said to me where was I going.

(C) He asked me where I was going.

(D) He told me where you were going.

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

For decades, aircraft were built mainly from aluminium alloys, which offered a useful balance of light weight and reasonable strength. In recent years, however, designers have turned increasingly to carbon-fibre composites. These modern materials are made by setting fine carbon threads in a tough resin, and they can be even stronger than aluminium while weighing considerably less. A lighter airframe burns less fuel over the life of the aircraft. Composites also resist the corrosion that gradually attacks metal parts, which lowers long-term maintenance costs. Their main drawback is the high cost of manufacture, but for large modern airliners the saving in fuel usually outweighs this expense.

Q11. According to the passage, the main reason designers now prefer carbon-fibre composites is that they:

(A) are cheaper to manufacture than aluminium

(B) are easier to paint than metal

(C) conduct electricity better than aluminium

(D) are strong yet much lighter, which saves fuel

Q12. (Based on the passage above.) Compared with metal parts, carbon-fibre composites have the advantage that they:

(A) resist corrosion and so lower long-term maintenance costs

(B) are completely free of cost to manufacture

(C) are always weaker but more flexible

(D) must be replaced after every single flight

Q13. Fill in the blank with the correct verb: “Mathematics _____ a scoring subject for engineering aspirants.”

(A) are

(B) were

(C) have been

(D) is

Q14. Fill in the blank with the correct verb form: "It _____ heavily when the plane finally landed."

(A) was raining

(B) rains

(C) has rained

(D) rain

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

(A) Turbulence

(B) Turbulance

(C) Turbulense

(D) Tubulence

Part B: General Awareness

Q16. In aviation safety equipment, the abbreviation **ELT** stands for:

(A) Electronic Landing Tracker

(B) Engine Life Timer

(C) Emergency Locator Transmitter

(D) External Lift Trimmer

Q17. The organisation that manages most of India's airports and provides air navigation services across Indian airspace is the:

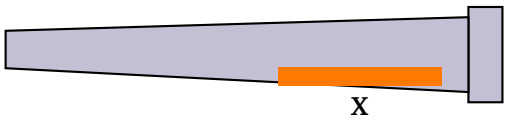
(A) Directorate General of Civil Aviation (DGCA)

(B) Airports Authority of India (AAI)

(C) Bureau of Civil Aviation Security (BCAS)

(D) Indian Space Research Organisation (ISRO)

Q18. In the top-view diagram of the wing below, the hinged panels marked **X** on the inner trailing edge are extended during take-off and landing. Their main purpose is to:



(Wing, top view; fuselage at right)

(A) reduce the aircraft's weight in flight

(B) steer the aircraft left and right

(C) cool the jet engine during cruise

(D) increase lift at low speed for take-off and landing

Q19. The American physicist often called a "father of modern rocketry," who built and launched the first liquid-fuelled rocket in 1926, was:

(A) Robert Goddard

(B) Wernher von Braun

(C) Isaac Newton

(D) Konstantin Tsiolkovsky

Q20. India's indigenous single-engine, multirole light combat aircraft, designed and built by HAL, is named the:

(A) Dhruv

(B) Rafale

(C) Tejas

(D) Sukhoi

Q21. The cockpit instrument that shows the **rate** at which an aircraft is climbing or descending (in feet per minute) is the:

(A) Airspeed indicator

(B) Vertical speed indicator

(C) Magnetic compass

(D) Fuel gauge

Q22. A heavier-than-air aircraft stays airborne because an upward force balances its weight. In normal flight, this upward force is generated mainly by the:

(A) landing gear

(B) tail rudder

(C) exhaust nozzle

(D) wings (airfoil shape)

Q23. Both the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) have their headquarters in which Canadian city?

(A) Montreal

(B) Toronto

(C) Ottawa

(D) Vancouver

Q24. In steady, straight-and-level flight, the lift produced by an aircraft balances its weight, while the thrust of the engines balances the:

(A) lift

(B) drag

(C) weight

(D) torque

Q25. The property of a material by which it returns to its original shape and size after the load deforming it is removed is called:

(A) plasticity

(B) density

(C) elasticity

(D) viscosity

Q26. Apart from being painted bright orange so they are easy to find, the flight recorders ("black boxes") are specially built so that the recorded data can survive:

(A) crash impact and intense fire

(B) exposure to ordinary daylight

(C) being switched off in flight

(D) routine cleaning of the cabin

Q27. The state-owned company that builds the Tejas fighter and the Dhruv helicopter, whose initials are **HAL**, has the full name:

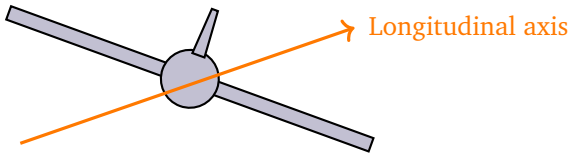
(A) Heavy Aircraft Limited

(B) Hindustan Avionics Limited

(C) Hindustan Air Lines

(D) Hindustan Aeronautics Limited

Q28. The figure shows the front view of an aircraft **banked** into a turn, with one wing dipped and the other raised. This banking rotation takes place about the longitudinal (nose-to-tail) axis and is known as motion about the:



(Aircraft banking, front view)

(A) pitch axis

(B) roll axis

(C) yaw axis

(D) thrust axis

Q29. The SI unit of **power** (the rate of doing work) is the:

(A) Newton

(B) Joule

(C) Watt

(D) Pascal

Q30. In cold weather, de-icing fluid is sprayed on an aircraft's wings before take-off. This is done mainly because a layer of ice on the wing would:

(A) make the aircraft too heavy to taxi

(B) improve the smoothness of the airflow

(C) have no effect on the wing at all

(D) disrupt the airflow over the wing and reduce lift

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: "Lucid" means easy to understand; expressed plainly and clearly; transparent in meaning.

Step 2 — Match the option: Among the choices, "Clear" carries exactly this sense of being easy to follow and free of confusion.

Why other options are wrong:

- Option A (Confusing): The opposite of lucid; hard to follow.
- Option B (Dim): Means faint or not bright; not the sense of "lucid."
- Option D (Twisted): Means distorted or tangled; the opposite of clear.

Final Answer: LUCID $\approx$ Clear $\Rightarrow$ $\boxed{\text{C}}$

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: "Ascend" means to go up, to climb, or to rise to a higher position.

Step 2 — Find the opposite: The opposite of going up is "Descend," which means to go down to a lower position.

Why other options are wrong:

- Option A (Climb): A synonym of ascend, not an antonym.
- Option C (Rise): A synonym of ascend, not an antonym.
- Option D (Soar): Means to fly or rise high; a synonym, not an antonym.

Final Answer: ASCEND $\leftrightarrow$ Descend $\Rightarrow$ $\boxed{\text{B}}$

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 "afraid" is always followed by "of."

Step 1 — Identify the adjective: The key word in the blank's sentence is "afraid," describing a feeling of fear toward something.

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

Why other options are wrong:

- Option A (from): We are not "afraid from" something; this is not the accepted collocation.
- Option B (with): "Afraid with" is not standard English.
- Option C (about): We may be "worried about" something, but not "afraid about."

Final Answer: afraid of heights $\Rightarrow$ $\boxed{D}$

Answer: (D) Go Back to Q3

Q4.

Solution

Concept — Comparatives of Latin origin: Words such as "senior," "junior," "superior," "inferior," and "prior" are followed by the preposition "to," never by "than."

Step 1 — Locate the comparison: Part (A) reads "She is senior than me," which compares two people.

Step 2 — Apply the rule: "Senior" must be followed by "to," so the correct form is "senior to me." The error therefore lies in part (A).

Why other options are wrong:

- Option B (in the maintenance section): A correct prepositional phrase with no error.
- Option C (by almost two years): Correctly states the extent of the difference.
- Option D (No error): Incorrect, because part (A) clearly contains the "than/to" error.

Final Answer: The error is "senior than" (should be "senior to") $\Rightarrow$ A

Answer: (A) Go Back to Q4

Q5.

Solution

Concept — "News" is a singular noun: Although it ends in "-s," the word "news" is uncountable and always takes a *singular* verb.

Step 1 — Identify the subject: The subject is "The news," which is treated as singular.

Step 2 — Choose the verb: A singular subject takes the singular verb "is," giving "The news is very encouraging."

Why other options are wrong:

- Option A (news are): Wrongly uses the plural "are."
- Option B (news were): Wrongly uses the plural past "were."
- Option D (news have been): Wrongly uses the plural "have."

Final Answer: "The news is very encouraging." $\Rightarrow$ C

Answer: (C) 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 large shed in which aircraft are housed and serviced" describes the special building at an airport where planes are parked and repaired.

Step 2 — Select the term: That building is a "Hangar."

Why other options are wrong:

- Option A (Garage): A shelter for road vehicles, not aircraft.
- Option C (Warehouse): A store for goods, not for housing aircraft.
- Option D (Terminal): The building where passengers board, not where aircraft are serviced.

Final Answer: Hangar $\Rightarrow$ B

Answer: (B) 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: "Hit the books" is an informal expression meaning to begin studying seriously and with effort.

Step 2 — Match the meaning: The closest meaning is "To study hard."

Why other options are wrong:

- Option B (To throw something away): A literal misreading of the word "hit."
- Option C (To start a fight): "Hit" here does not mean to strike a person.
- Option D (To close a library): Unrelated to the idiom's meaning.

Final Answer: hit the books = study hard $\Rightarrow$ A

Answer: (A) 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: The technician needs the altimeter to "read the correct height." Adjusting an instrument so that it reads accurately is called calibrating it.

Step 2 — Select the word: "Calibrate the altimeter" is the natural and meaningful collocation.

Why other options are wrong:

- Option A (dismantle): To take apart; this would not make it read correctly.
- Option B (lubricate): To apply oil or grease; unrelated to accuracy of reading.
- Option C (paint): To coat with colour; has nothing to do with the reading.

Final Answer: calibrate the altimeter $\Rightarrow$ D

Answer: (D) Go Back to Q8

Q9.

Solution

Concept — Active to passive (simple future): In the passive of a "will + verb" sentence, the object becomes the subject, and the verb becomes "will be + past participle," with the original subject introduced by "by" (often dropped when general).

Step 1 — Identify the parts: Subject = "They," verb = "will inspect," object = "the aircraft."

Step 2 — Build the passive: Object first: "The aircraft" + "will be inspected" + "tomorrow."

Why other options are wrong:

- Option A (is inspected tomorrow): Present tense; the original is future.
- Option C (will inspect tomorrow): Still active in form, not passive.
- Option D (has been inspected): Present-perfect passive; wrong tense for a future action.

Final Answer: "The aircraft will be inspected tomorrow." $\Rightarrow$ B

Answer: (B) Go Back to Q9

Q10.

Solution

Concept — Reporting a "Wh-" question: When a question is reported, we use "asked," keep the question word, change the word order to that of a statement (subject before verb), and back-shift the tense after a past reporting verb.

Step 1 — Choose the reporting verb and order: "He said to me" becomes "He asked me," and "Where are you going?" loses its question word order to become "where I . . . going."

Step 2 — Back-shift and adjust the pronoun: "are going" (present) becomes "was going" (past); "you" refers to the listener "me," so it becomes "I." Result: "He asked me where I was going."

Why other options are wrong:

- Option A (where I am going): Fails to back-shift "am" to "was."
- Option B (where was I going): Keeps the interrogative word order, which is wrong in reported speech.
- Option D (where you were going): Wrongly keeps the pronoun "you" and uses "told" for a question.

Final Answer: "He asked me where I was going." $\Rightarrow$ C

Answer: (C) Go Back to Q10

Q11.

Solution

Concept — Reading comprehension (main reason): The answer must come directly from what the passage states, not from outside assumptions.

Step 1 — Find the relevant lines: The passage says composites "can be even stronger than aluminium while weighing considerably less" and that "a lighter airframe burns less fuel."

Step 2 — Match to an option: This directly supports "strong yet much lighter, which saves fuel."

Why other options are wrong:

- Option A (cheaper to manufacture): The passage says their drawback is the "high cost of manufacture."
- Option B (easier to paint): Painting is never mentioned in the passage.
- Option C (conduct electricity better): The passage makes no claim about electrical conduction.

Final Answer: strong yet much lighter, which saves fuel $\Rightarrow$ D

Answer: (D) 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 composites "resist the corrosion that gradually attacks metal parts, which lowers long-term maintenance costs."

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

Why other options are wrong:

- Option B (free of cost): The passage calls manufacture costly, not free.
- Option C (always weaker): The passage says composites can be even stronger than aluminium.
- Option D (replaced after every flight): Nothing in the passage suggests this.

Final Answer: resist corrosion and so lower long-term maintenance costs $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q12

Q13.

Solution

Concept — Subjects ending in "-s" that are singular: The names of certain subjects and sciences — mathematics, physics, economics — end in "-s" but are treated as *singular* and take a singular verb.

Step 1 — Identify the subject: The subject is "Mathematics," a single field of study.

Step 2 — Choose the verb: A singular subject takes the singular present verb "is."

Why other options are wrong:

- Option A (are): Plural verb; wrong for the singular "mathematics."
- Option B (were): Plural past verb; wrong in both number and tense here.
- Option C (have been): Plural present-perfect; does not agree with the singular subject.

Final Answer: "Mathematics is a scoring subject." $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q13

Q14.

Solution

Concept — Past continuous for an action in progress: When one action was already in progress at the moment a second, shorter past action happened, the longer action takes the past continuous ("was/were + -ing").

Step 1 — Identify the two events: The rain was already going on *when* the plane landed (the shorter, completed event).

Step 2 — Apply the tense: The ongoing background action uses the past continuous: "It was raining heavily."

Why other options are wrong:

- Option B (rains): Simple present; the sentence describes the past.
- Option C (has rained): Present perfect; cannot show an action in progress at a past moment.
- Option D (rain): A bare base form that does not agree with "It" or fit the tense.

Final Answer: It was raining heavily $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q14

Q15.

Solution

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

Step 1 — Recall the correct form: The disturbed, irregular air an aircraft meets in flight is spelled **turbulence** ("turbul-" then "-ence," with a "u" after the first "t").

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

Why other options are wrong:

- Option B (Turbulance): Wrong vowel ("-ance" instead of "-ence").
- Option C (Turbulense): Wrong consonant ("-se" instead of "-ce").
- Option D (Tubulence): Missing the "r" after the first "u."

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

Answer: (A) Go Back to Q15

Q16.

Solution

Concept — Aviation safety abbreviations: Many aircraft systems are known by standard three-letter codes.

Step 1 — Expand the abbreviation: ELT stands for **Emergency Locator Transmitter** — a beacon that automatically transmits a distress signal so a downed aircraft can be located.

Step 2 — Confirm the role: It activates on impact and helps search-and-rescue teams find the crash site.

Why other options are wrong:

- Option A (Electronic Landing Tracker): Not a real aviation term.
- Option B (Engine Life Timer): Invented; not what ELT means.
- Option D (External Lift Trimmer): Not a recognised device.

Final Answer: Emergency Locator Transmitter $\Rightarrow$ C

Answer: (C) Go Back to Q16

Q17.

Solution

Concept — Indian aviation institutions: Different bodies handle regulation, airport operations, and security.

Step 1 — Identify the body: The **Airports Authority of India (AAI)** manages most Indian airports and provides air navigation services (air traffic management) across Indian airspace.

Step 2 — Confirm its scope: It runs airports and the communication, navigation, and surveillance systems that guide aircraft.

Why other options are wrong:

- Option A (DGCA): The safety and licensing regulator, not the airport operator.
- Option C (BCAS): Handles civil-aviation security, not airport management.
- Option D (ISRO): The space research organisation, unrelated to airports.

Final Answer: Airports Authority of India (AAI) $\Rightarrow$ B

Answer: (B) Go Back to Q17

Q18.

Solution

Concept — High-lift devices: Flaps are movable panels on the inner trailing edge of the wing that change the wing's shape to boost lift at low speeds.

Step 1 — Locate the marked surfaces: The marks X are on the *inner trailing edge* of the wing, near the fuselage — the standard position of the flaps.

Step 2 — Identify their function: When extended for take-off and landing, flaps increase the wing's camber and area, generating more lift at the lower speeds used near the ground.

Why other options are wrong:

- Option A (reduce weight): Flaps do not change the aircraft's weight.
- Option B (steer left and right): Steering in roll is done by ailerons (outer wing), not flaps.
- Option C (cool the engine): Flaps have nothing to do with engine cooling.

Final Answer: increase lift at low speed for take-off and landing $\Rightarrow$ D

Answer: (D) Go Back to Q18

Q19.

Solution

Concept — History of rocketry: The first liquid-fuelled rocket was a milestone leading to modern spaceflight.

Step 1 — Recall the pioneer: On 16 March 1926, the American physicist **Robert Goddard** built and launched the first liquid-fuelled rocket.

Step 2 — Confirm the credit: For this work he is often called a "father of modern rocketry."

Why other options are wrong:

- Option B (von Braun): A later rocket engineer (V-2 and Saturn V), not the 1926 pioneer.
- Option C (Isaac Newton): Gave the laws of motion behind rocketry but built no rockets.
- Option D (Tsiolkovsky): A theorist of spaceflight, but did not launch the first liquid-fuelled rocket.

Final Answer: Robert Goddard $\Rightarrow$ A

Answer: (A) Go Back to Q19

Q20.

Solution

Concept — Indigenous Indian aircraft: HAL designs and builds several home-grown military aircraft.

Step 1 — Identify the aircraft: The **Tejas** is India's indigenous single-engine, multirole Light Combat Aircraft (LCA).

Step 2 — Confirm the builder: It is developed and produced by Hindustan Aeronautics Limited (HAL).

Why other options are wrong:

- Option A (Dhruv): An indigenous *helicopter*, not a combat aeroplane.
- Option B (Rafale): A French-built fighter, not indigenous to India.
- Option D (Sukhoi): A Russian-origin fighter (Su-30 family), not the indigenous LCA.

Final Answer: Tejas $\Rightarrow$ C

Answer: (C) Go Back to Q20

Q21.

Solution

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

Step 1 — Match instrument to quantity: The **vertical speed indicator (VSI)** shows the rate of climb or descent, usually in feet per minute.

Step 2 — Confirm: It tells the pilot how fast the aircraft is gaining or losing height, not the height itself.

Why other options are wrong:

- Option A (Airspeed indicator): Shows speed through the air, not rate of climb.
- Option C (Magnetic compass): Shows heading/direction, not vertical rate.
- Option D (Fuel gauge): Shows fuel remaining, unrelated to climb rate.

Final Answer: Vertical speed indicator $\Rightarrow$ B

Answer: (B) Go Back to Q21

Q22.

Solution

Concept — The source of lift: A heavier-than-air aircraft must produce an upward aerodynamic force to balance its weight.

Step 1 — Identify the lifting surface: This upward force, called lift, is generated mainly by the **wings**, whose airfoil (curved) cross-section deflects air and creates a pressure difference.

Step 2 — Confirm the balance: In level flight the lift from the wings equals the weight of the aircraft.

Why other options are wrong:

- Option A (landing gear): Supports the aircraft only on the ground; it produces no lift.
- Option B (tail rudder): Controls yaw (left/right), not the main lift.
- Option C (exhaust nozzle): Produces forward thrust, not the upward lift.

Final Answer: the wings (airfoil shape) $\Rightarrow$ D

Answer: (D) Go Back to Q22

Q23.

Solution

Concept — Headquarters of international aviation bodies: Two key global aviation organisations share the same host city.

Step 1 — Recall the city: Both ICAO (the UN aviation agency) and IATA (the airlines' association) are headquartered in **Montreal**, Canada.

Step 2 — Confirm: ICAO was set up there after the 1944 Chicago Convention, and IATA also bases its head office in Montreal.

Why other options are wrong:

- Option B (Toronto): A major Canadian city, but not the headquarters of these bodies.
- Option C (Ottawa): Canada's capital, but not where ICAO/IATA are based.
- Option D (Vancouver): On the west coast; not the host city.

Final Answer: Montreal ⇒ A

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — The four forces of flight: In steady level flight the four forces form two balancing pairs.

Step 1 — Match the pairs: Lift balances weight (vertical pair); thrust balances **drag** (horizontal pair).

Step 2 — Confirm: Drag is the backward resistance of the air, and the engine's thrust must equal it to keep a constant speed.

Why other options are wrong:

- Option A (lift): Lift is balanced by weight, not by thrust.
- Option C (weight): Weight is balanced by lift, not by thrust.
- Option D (torque): A turning effect, not one of the straight-line balancing forces here.

Final Answer: drag ⇒ B

Answer: (B) Go Back to Q24

Q25.

Solution

Concept — Mechanical properties of materials: Aircraft parts must flex under load and then recover their shape.

Step 1 — Define the property: Elasticity is the property by which a material returns to its original shape and size once the deforming load is removed.

Step 2 — Apply to aircraft: Wings and other parts bend slightly under aerodynamic loads and spring back, thanks to elasticity.

Why other options are wrong:

- Option A (plasticity): The tendency to keep a permanent (non-recovering) deformation — the opposite idea.
- Option B (density): Mass per unit volume; unrelated to recovering shape.

- Option D (viscosity): A fluid's resistance to flow; not a property of solids returning to shape.

Final Answer: elasticity $\Rightarrow$ C

Answer: (C) Go Back to Q25

Q26.

Solution

Concept — Crash-survivable flight recorders: The "black boxes" must keep their data intact even in a severe accident.

Step 1 — Identify the survival requirement: They are built and tested to survive **crash impact and intense fire**, as well as deep-water pressure, so the recorded data can be recovered afterwards.

Step 2 — Confirm: A strong, heat-resistant armoured housing protects the memory unit inside.

Why other options are wrong:

- Option B (ordinary daylight): Daylight poses no threat to the data; this is not a design requirement.
- Option C (being switched off): The challenge is physical destruction, not being turned off.
- Option D (routine cleaning): Cabin cleaning has nothing to do with recorder survivability.

Final Answer: crash impact and intense fire $\Rightarrow$ A

Answer: (A) 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: It builds the Tejas fighter, the Dhruv helicopter, and a range of aero-engines and avionics.

Why other options are wrong:

- Option A (Heavy Aircraft Limited): Not the company's name.
- Option B (Hindustan Avionics Limited): "Avionics" is wrong; the correct word is "Aeronautics."
- Option C (Hindustan Air Lines): An airline-style name, not this aerospace manufacturer.

Final Answer: Hindustan Aeronautics Limited $\Rightarrow$ D

Answer: (D) 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 axis: Banking, with one wing dipped and the other raised, is rotation about the *longitudinal* (nose-to-tail) axis shown by the orange arrow.

Step 2 — Name the motion: Rotation about this longitudinal axis is called **roll**, controlled by the ailerons.

Why other options are wrong:

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

Final Answer: roll axis $\Rightarrow$ 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 power: The SI unit of power is the **watt** (W), where $1\ \text{W} = 1\ \text{J/s}$ (one joule of work done per second).

Step 2 — Apply the meaning: Power is the rate of doing work, so its unit measures energy delivered per unit time.

Why other options are wrong:

- Option A (Newton): The SI unit of force, not power.
- Option B (Joule): The SI unit of work or energy, not the rate of doing work.
- Option D (Pascal): The SI unit of pressure (force per unit area).

Final Answer: Watt $\Rightarrow$ C

Answer: (C) Go Back to Q29

Q30.

Solution

Concept — Ice contamination and lift: A wing produces lift only when air flows smoothly over its carefully shaped surface.

Step 1 — Describe the effect of ice: A rough layer of ice changes the wing's smooth airfoil shape, so the airflow over it becomes disturbed and separates early.

Step 2 — State the consequence: This disrupted airflow **reduces the lift** the wing can produce (and increases drag), which is dangerous at take-off. De-icing removes the ice to restore smooth airflow.

Why other options are wrong:

- Option A (too heavy to taxi): The main danger is lost lift, not taxiing weight.
- Option B (improve airflow): Ice worsens, not improves, the airflow.
- Option C (no effect): False — even thin ice can seriously cut lift.

Final Answer: disrupt the airflow over the wing and reduce lift $\Rightarrow$ D

Answer: (D) Go Back to Q30

Answer Key

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