

AME CET English & General Awareness Sample Paper – 12

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 fundamen-tals, 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 opposite in meaning to the word **OBSOLETE** as used in engineering contexts.

- (A) Redundant
- (B) Contemporary
- (C) Archaic
- (D) Prehistoric

Q2. Fill in the blank with the correct option:

The maintenance team _____ working on the aircraft fuselage since early morning.

- (A) are
- (B) is



- (C) has been
- (D) have been

Q3. In the following question, a sentence has been divided into four parts. Identify the part that contains a grammatical error.

The number of technical snags (A) / reported during the winter months (B) / were significantly

- (A) The number of technical snags
- (B) reported during the winter months
- (C) were significantly higher
- (D) than expected.

Q4. Choose the option that correctly converts the given sentence into passive voice:

The ground crew inspected the landing gear before takeoff.

- (A) The landing gear was inspected by the ground crew before takeoff.
- (B) The landing gear has been inspected by the ground crew before takeoff.
- (C) The landing gear is being inspected by the ground crew before takeoff.
- (D) The landing gear was being inspected by the ground crew before takeoff.

Q5. Select the correct spelling from the options given below.

- (A) Maintainance
- (B) Maintenance
- (C) Maintenece
- (D) Mentainance

Q6. Identify the option that best expresses the meaning of the underlined idiom:

The structural modifications were carried out **at the eleventh hour** just before the final certification.

- (A) At an early stage
- (B) At the very last moment



- (C) After the deadline
- (D) During midnight shift

Q7. Select the word that is closest in meaning to **HAZARDOUS**.

- (A) Secure
- (B) Pure
- (C) Perilous
- (D) Resilient

Q8. Fill in the blank with the appropriate preposition:

The technician was held accountable _____ the error in the cockpit instrument calibration.

- (A) with
- (B) for
- (C) to
- (D) at

Q9. Choose the option that correctly changes the sentence into indirect speech:

The pilot said, "The weather is clearing up over the runway."

- (A) The pilot said that the weather is clearing up over the runway.
- (B) The pilot said that the weather was clearing up over the runway.
- (C) The pilot said that the weather has cleared up over the runway.
- (D) The pilot informed that the weather clears up over the runway.

Q10. Select the correct grammatically rectified sentence from the choices provided.

- (A) Neither the pilot nor the co-pilot were aware of the radio failure.
- (B) Neither the pilot nor the co-pilot was aware of the radio failure.
- (C) Neither the pilot or the co-pilot was aware of the radio failure.
- (D) Neither the pilot nor the co-pilot are aware of the radio failure.



Q11. Choose the phrase that best fits the blank:

An instrument used for measuring the altitude of an aircraft relative to a fixed datum is called an _____.

- (A) anemometer
- (B) altimeter
- (C) altostat
- (D) ammeter

Q12. Direction for Q12 & Q13: Read the short passage below and answer the questions based on its content.

The development of modern aircraft structures relies heavily on composite materials. Unlike traditional aluminum alloys, composites like carbon-fiber reinforced polymers offer exceptional strength-to-weight ratios. This reduction in weight directly translates to increased fuel efficiency and a longer operational range. However, composite structures require specialized non-destructive testing (NDT) methods to detect internal defects such as delamination, which are completely invisible to the naked eye. Consequently, aviation technicians must undergo rigorous training to master these advanced inspection techniques.

According to the passage, what is the primary operational benefit of using composite materials instead of aluminum alloys?

- (A) Lower initial manufacturing costs
- (B) Easier visual inspection by technicians
- (C) Increased fuel efficiency and longer operational range
- (D) Complete elimination of internal material defects

Q13. Why are specialized non-destructive testing (NDT) methods required for composite structures?

- (A) Because traditional aluminum alloys cannot be tested using NDT.
- (B) Because internal defects like delamination cannot be seen with the naked eye.



- (C) To reduce the training hours required for aviation maintenance teams.
- (D) To increase the total structural weight of the operational aircraft.

Q14. Complete the sentence using the most appropriate verbal structure:

If the inspection team _____ the leakage yesterday, the flight would not have been delayed today.

- (A) detects
- (B) had detected
- (C) would detect
- (D) has detected

Q15. Choose the alternative that can substitute the given group of words:

A building or shed where aircraft are kept for housing and maintenance.

- (A) Runway
- (B) Hangar
- (C) Apron
- (D) Terminal



Part B: General Awareness

- Q16.** Which aerodynamic force must overcome the weight of an aircraft to allow it to lift off the ground and maintain flight?
- (A) Thrust
 - (B) Drag
 - (C) Lift
 - (D) Torque
- Q17.** Which regulatory body is primarily responsible for the issuance of Aircraft Maintenance Engineer (AME) licenses and enforcing civil aviation regulations in India?
- (A) ICAO
 - (B) FAA
 - (C) DGCA
 - (D) EASA
- Q18.** Who among the following is widely recognized as the father of Indian Civil Aviation and held India's first pilot license?
- (A) J.R.D. Tata
 - (B) Homi Bhabha
 - (C) Satish Dhawan
 - (D) Vikram Sarabhai
- Q19.** Under standard atmospheric conditions, which instrument in the cockpit relies on both static pressure and pitot pressure to provide dynamic speed readings to the pilot?
- (A) Altimeter
 - (B) Vertical Speed Indicator
 - (C) Airspeed Indicator



(D) Attitude Indicator

Q20. According to Newton's Third Law of Motion, the forward thrust generated by a jet engine is a direct reaction to which of the following actions?

- (A) The upward lifting force acting on the wing surfaces
- (B) The high-velocity backward ejection of exhaust gases
- (C) The rotation of the auxiliary landing gears
- (D) The reduction of drag across the aircraft fuselage

Q21. Where is the global headquarters of the International Civil Aviation Organization (ICAO) located?

- (A) Geneva, Switzerland
- (B) Montreal, Canada
- (C) Washington D.C., USA
- (D) Paris, France

Q22. In December 1903, the Wright brothers achieved the world's first sustained and controlled powered flight. In which location did this historic event take place?

- (A) Dayton, Ohio
- (B) Kitty Hawk, North Carolina
- (C) Paris, France
- (D) St. Louis, Missouri

Q23. Which control surface on a fixed-wing aircraft is primarily responsible for controlling the aircraft's motion around its lateral axis, also known as pitching?

- (A) Ailerons
- (B) Rudder
- (C) Elevators
- (D) Flaps



- Q24.** What is the standard SI unit used for measuring pressure in scientific aviation calculations and cabin structural tolerance testing?
- (A) Newton
 - (B) Pascal
 - (C) Joule
 - (D) Watt
- Q25.** Hindustan Aeronautics Limited (HAL) is a premier Indian aerospace company. Where is its corporate headquarters situated?
- (A) New Delhi
 - (B) Mumbai
 - (C) Bengaluru
 - (D) Hyderabad
- Q26.** Why is artificial cabin pressurization critically required in commercial passenger aircraft flying at high cruising altitudes, typically above 10,000 feet?
- (A) To prevent structural collapse caused by excessive external bird strikes
 - (B) To maintain adequate oxygen partial pressure and prevent hypoxia in passengers
 - (C) To increase the ambient temperature inside the cargo holds
 - (D) To eliminate the total aerodynamic drag acting on the tail section
- Q27.** What does the acronym “AME” stand for within the structural framework of civil aviation maintenance guidelines?
- (A) Aircraft Management Executive
 - (B) Aviation Maintenance Expert
 - (C) Aircraft Maintenance Engineer
 - (D) Aerospace Mechanical Engineer



- Q28.** In 1932, Tata Airlines was established, marking a major milestone in Indian history. Which city served as the starting base for its inaugural scheduled flight to Karachi?
- (A) Bombay
 - (B) Calcutta
 - (C) Madras
 - (D) Delhi
- Q29.** What is the fundamental role of the rudder on an aircraft during flight operations?
- (A) To control roll along the longitudinal axis
 - (B) To control yaw along the vertical axis
 - (C) To control pitch along the lateral axis
 - (D) To increase structural drag during taxiing
- Q30.** Which gas is absolutely essential to support combustion inside an aircraft's piston or turbine engine combustion chambers?
- (A) Nitrogen
 - (B) Hydrogen
 - (C) Oxygen
 - (D) Carbon Dioxide



Detailed Solutions**Q1.****Solution****Concept:**

The concept involves understanding antonyms within vocabulary, specifically focusing on technical and engineering terminology. In industrial and technical contexts, words describing the lifecycle and relevance of machinery, standards, or technology are frequently utilized.

Solution:

Step 1: Analyze the given word. The word “OBSOLETE” refers to something that is no longer produced or used, out of date, or superseded by newer designs and technologies.

Step 2: Examine option (A) “Redundant”. Redundant means no longer needed or useful, or superfluous, which functions more as a synonym rather than an opposite.

Step 3: Examine option (B) “Contemporary”. Contemporary means living, occurring, or existing at the same time, or belonging to the present time. In technical terms, it represents modern, up-to-date systems.

Step 4: Examine option (C) “Archaic”. Archaic means very old or old-fashioned, which acts as a direct synonym to obsolete.

Step 5: Examine option (D) “Prehistoric”. Prehistoric relates to the period before written history, which is irrelevant to standard engineering lifecycles.

Step 6: Compare the definitions to identify the opposite. Since obsolete implies an outdated state, the exact opposite is a state belonging to the current era, which is contemporary.

Final Answer:

Answer: (B)

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Q2.

Solution**Concept:**

This question evaluates subject-verb agreement paired with appropriate tense identification. The presence of the time marker “since early morning” indicates that the action started in the past and is still continuing in the present, requiring a perfect continuous tense.

Solution:

Step 1: Identify the subject of the sentence. The subject is “The maintenance team”.

Step 2: Determine the grammatical number of the subject. Although a team consists of multiple members, “The maintenance team” functions as a collective noun acting as a single cohesive unit in this context, making it a singular subject.

Step 3: Analyze the time constraint indicator. The phrase “since early morning” mandates the use of the Present Perfect Continuous tense to depict ongoing action.

Step 4: Evaluate the given options based on singularity and tense requirements. Options (A) “are” and (D) “have been” are plural forms and thus incorrect. Option (B) “is” represents the present continuous, which fails to accommodate the continuous duration implied by “since”.

Step 5: Select the singular present perfect continuous form, which is “has been”.

Final Answer:

Answer: (C)

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Q3.**Solution****Concept:**

The core concept is subject-verb agreement rules involving noun phrases that begin with “The number of” versus phrases that begin with “A number of”. This rule is crucial for identifying structural errors in sentence formation.

Solution:

Step 1: Break down the sentence structure into its constituent parts to locate the subject and its corresponding verb.

Step 2: Identify the main subject of the clause, which is contained in part (A): “The number of technical snags”.

Step 3: Apply the grammatical rule for this quantifier. The expression “The number of” is always followed by a plural noun but takes a singular verb because it focuses on the singular total count. Conversely, “A number of” takes a plural verb.

Step 4: Locate the main verb of the sentence in part (C), which is written as “were significantly higher”.

Step 5: Check for grammatical compatibility between the subject and the verb. The plural auxiliary verb “were” is structurally incompatible with the singular construction dictated by “The number of”.

Step 6: Conclude that “were” must be replaced with the singular past tense verb “was” to make the sentence grammatically accurate. Therefore, the error lies in part (C).

Final Answer:

Answer: (C)

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Q4.

Solution**Concept:**

This exercise tests voice transformation rules from active voice to passive voice. The structural transformation requires moving the direct object into the subject position while altering the verb structure according to the original tense without altering the contextual meaning.

Solution:

Step 1: Identify the components of the active voice sentence: Subject = "The ground crew", Verb = "inspected", Object = "the landing gear".

Step 2: Identify the tense of the active sentence. The verb "inspected" is in the Simple Past tense.

Step 3: Recall the standard grammatical formula for converting a Simple Past tense sentence into the passive voice: Object + was/were + Past Participle (V3) + by + Subject.

Step 4: Formulate the transformation using the components identified. The singular object "the landing gear" requires the auxiliary verb "was", followed by the past participle "inspected".

Step 5: Assemble the complete passive phrase: "The landing gear was inspected by the ground crew before takeoff."

Step 6: Match this with the options. Option (A) matches perfectly. Option (B) uses present perfect, option (C) uses present continuous, and option (D) uses past continuous, all of which distort the original tense.

Final Answer: The landing gear was inspected by the ground crew before takeoff.

Answer: (A)

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Q5.**Solution****Concept:**

The concept involves orthographic precision and recognizing frequently misspelled technical words within aviation engineering literature. Morphological derivations often change spelling configurations from the root word.

Solution:

Step 1: Examine the base root word, which is the verb “maintain”. It features the diphthong “ai” in both syllables.

Step 2: Analyze the morphological shift that occurs when adding the suffix “-ance” to convert the verb into a noun.

Step 3: Apply the rule of vowel shifting in phonetic transitions for this specific word family. During the nominalization process, the second “ai” in “maintain” shifts structurally to a simple vowel “e”.

Step 4: Combine the components to build the accurate spelling structure: m-a-i-n-t-e-n-a-n-c-e.

Step 5: Cross-check the derived spelling with the four options provided in the question list.

Step 6: Confirm that Option (B) matches this correct layout perfectly, whereas options (A), (C), and (D) contain common phonetic errors.

Final Answer: Maintenance

Answer: (B)

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Q6.

Solution**Concept:**

This question focuses on idiomatic literacy. Idioms contain metaphorical meanings that cannot be directly deduced from the literal definitions of the individual words themselves, requiring contextual analysis.

Solution:

Step 1: Isolate the underlined idiom phrase: “at the eleventh hour”.

Step 2: Analyze the historical or logical source of the expression. A standard clock face has twelve hours, meaning the eleventh hour represents the final segment of time available before a cycle finishes or a deadline passes.

Step 3: Relate this metaphorical clock concept to a functional timeline definition. It signifies performing an action at the latest possible moment right before it becomes impossible to act.

Step 4: Evaluate the choices. Option (A) is the polar opposite. Option (C) implies the deadline has already passed. Option (D) takes the word “hour” too literally.

Step 5: Match the definition with Option (B) “At the very last moment”, which clearly captures the exact meaning of the idiom within the sentence context.

Final Answer:

Answer: (B)

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Q7.

Solution**Concept:**

The core concept involves identification of synonyms, requiring a clear understanding of semantic equivalence between descriptive adjectives frequently encountered in safety operational documents.

Solution:

Step 1: Evaluate the semantic property of the target word “HAZARDOUS”. It is defined as something full of risk, dangerous, perilous, or unsafe.

Step 2: Assess Option (A) “Secure”. Secure means safe and protected from danger, which represents a direct antonym rather than a synonym.

Step 3: Assess Option (B) “Pure”. Pure means wholesome or uncontaminated, which lacks any semantic connection to risk profiling.

Step 4: Assess Option (C) “Perilous”. Perilous is derived from the noun peril (meaning serious or immediate danger). Thus, perilous directly translates to full of danger or risk.

Step 5: Assess Option (D) “Resilient”. Resilient refers to the capacity to recover quickly from difficulties or structural stress, which does not mean dangerous.

Step 6: Conclude that “Perilous” matches the semantic profile of “Hazardous” precisely.

Final Answer:

Answer: (C)

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Q8.

Solution**Concept:**

This item tests appropriate prepositional collocation. Certain adjectives and verbs exhibit lexical dependency, meaning they must be paired with fixed prepositions to generate specific idiomatic meanings.

Solution:

Step 1: Examine the main structural clause: “The technician was held accountable _____ the error...”.

Step 2: Identify the governing adjective requiring a prepositional attachment, which is “accountable”.

Step 3: Identify the grammatical entity that follows the blank space. The entity is “the error”, which acts as the specific reason or cause for the accountability.

Step 4: Recall the fixed linguistic collocation rule for this adjective. When expressing responsibility for a specific cause, action, or outcome, the structural pattern dictates using the formula: accountable + for + something.

Step 5: Contrast this with alternatives. One is accountable “to” a person or authority, but accountable “for” an action or mistake.

Step 6: Select option (B) “for” as it correctly links the accountability to the technical mistake.

Final Answer:

Answer: (B)

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Q9.**Solution****Concept:**

This exercise covers rules for transforming direct speech into indirect (reported) speech. The conversion requires adjusting pronouns, shifting tenses backward when the reporting verb is in the past tense, and removing quotation marks.

Solution:

Step 1: Analyze the reporting clause: "The pilot said". The reporting verb "said" is in the Simple Past tense, which necessitates a tense back-shift inside the reported statement.

Step 2: Analyze the original tense used inside the quotation marks: "The weather is clearing up...". This is written in the Present Continuous tense.

Step 3: Apply the standard tense transformation rule for reported speech. Under a past tense reporting verb, a Present Continuous tense verb must shift backward into the Past Continuous tense ("is clearing" becomes "was clearing").

Step 4: Eliminate quotation marks and insert the conjunction "that" to unify the clauses safely into a single statement.

Step 5: Draft the full phrase: "The pilot said that the weather was clearing up over the runway."

Step 6: Review the options. Option (A) fails to execute the tense shift. Option (C) shifts to present perfect. Option (D) incorrectly alters the aspect to simple present. Option (B) applies the rules correctly.

Final Answer: The pilot said that the weather was clearing up over the runway.

Answer: (B)

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Q10.**Solution****Concept:**

The underlying concept evaluates subject-verb agreement tied to correlative conjunctions. Correlative expressions like “neither...nor” link two distinct sub-subjects together within a single sentence frame.

Solution:

Step 1: Recall the explicit grammatical rule governing subject-verb agreement when utilizing the correlative conjunction pairing “neither...nor”.

Step 2: The rule states that when two subjects are joined by “neither...nor”, the verb must agree in number with the closer subject (the subject nearest to the verb structure).

Step 3: Evaluate the subjects in the sentence. Subject 1 is “the pilot” (singular) and Subject 2 is “the co-pilot” (singular).

Step 4: Identify the closer subject to the verb location, which is “the co-pilot”. Since “the co-pilot” is singular, the following auxiliary verb must also be singular.

Step 5: Test the options based on this criterion. Option (A) errs by using the plural form “were”. Option (C) errs by utilizing the wrong correlative pair “neither...or”. Option (D) errs by using the plural present form “are”.

Step 6: Verify Option (B), which correctly pairs “neither...nor” with the singular auxiliary verb “was”.

Final Answer: Neither the pilot nor the co-pilot was aware of the radio failure.

Answer: (B)

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Q11.**Solution****Concept:**

The concept relies on specific technical definitions of aviation instruments. Avionics and cockpit layouts feature distinct indicators designed to read individual physical properties of flight environments.

Solution:

Step 1: Analyze the operational function provided in the sentence: “measuring the altitude of an aircraft relative to a fixed datum”.

Step 2: Define each option instrument to find the correct match.

Step 3: Evaluate option (A) “anemometer”. An anemometer is an instrument designed to measure wind speed and direction, not altitude.

Step 4: Evaluate option (B) “altimeter”. The prefix “alti-” relates to altitude or height. An altimeter specifically measures barometric pressure to calculate and display the aircraft’s altitude above a set reference level.

Step 5: Evaluate option (C) “altostat”. An altostat is a regulator device used to maintain a constant pressure or altitude automatically, not a primary measurement instrument.

Step 6: Evaluate option (D) “ammeter”. An ammeter measures electrical current in amperes within the aircraft’s electrical bus system. Thus, option (B) is correct.

Final Answer:

Answer: (B)

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Q12.

Solution**Concept:**

This question tests reading comprehension performance. The primary instruction is to isolate fact-based information explicitly declared inside the provided textual reading passage without making outside assumptions.

Solution:

Step 1: Locate the keywords within the text relating to “composite materials” and “aluminum alloys”.

Step 2: Read the second and third sentences of the text carefully: “Unlike traditional aluminum alloys, composites like carbon-fiber reinforced polymers offer exceptional strength-to-weight ratios. This reduction in weight directly translates to increased fuel efficiency and a longer operational range.”

Step 3: Extract the direct explicit consequence of the weight reduction mentioned in the text: it leads directly to “increased fuel efficiency and a longer operational range”.

Step 4: Match this extracted textual fact against the four choices given.

Step 5: Observe that Option (C) states exactly what is written in the text. Options (A), (B), and (D) are either unmentioned or explicitly contradicted by the passage statements.

Final Answer: Increased fuel efficiency and longer operational range

Answer: (C)

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Q13.**Solution****Concept:**

This is a comprehension question requiring the extraction of a cause-and-effect relationship explicitly highlighted by the text regarding material testing standards.

Solution:

Step 1: Locate the portion of the passage that mentions “specialized non-destructive testing (NDT) methods”.

Step 2: Read the fourth sentence carefully: “However, composite structures require specialized non-destructive testing (NDT) methods to detect internal defects such as delamination, which are completely invisible to the naked eye.”

Step 3: Identify the underlying cause stated for this requirement. The necessity arises because certain defects, like delamination, occur internally and cannot be discovered via simple visual inspection because they are “invisible to the naked eye”.

Step 4: Review the options to find an exact match for this cause.

Step 5: Note that Option (B) mirrors this reason perfectly. Options (A), (C), and (D) present false rationales that are completely unsupported by the provided context.

Final Answer:

Because internal defects like delamination cannot be seen with the naked eye.

Answer: (B)

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Q14.**Solution****Concept:**

The question checks mastery over conditional sentence structures, specifically looking at a Type 3 conditional configuration, which addresses hypothetical past situations and their past or present consequences.

Solution:

Step 1: Analyze the structure of the independent main clause (the result clause): “the flight would not have been delayed today”.

Step 2: Recognize the verbal template of this result clause, which follows the pattern: would + not + have + Past Participle (V3).

Step 3: Recall the conditional structural alignment rule. When the result clause of a conditional sentence uses would have + V3, the corresponding conditional “if” clause must utilize the Past Perfect tense to express a past unreal condition.

Step 4: Recall the mathematical format of the Past Perfect tense: had + Past Participle (V3).

Step 5: Apply this format to the verb “detect”, yielding the phrase “had detected”.

Step 6: Review the options. Option (B) contains “had detected”, matching the required past perfect rule perfectly.

Final Answer:

Answer: (B)

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Q15.

Solution**Concept:**

This exercise tests one-word substitutions focusing on specialized aviation infrastructure terms. It requires identifying the correct term for an airfield layout element based on its primary function.

Solution:

Step 1: Read the definition given in the prompt: “A building or shed where aircraft are kept for housing and maintenance.”

Step 2: Define each option to find the matching structural facility.

Step 3: Option (A) “Runway” is a defined rectangular strip of land prepared for the landing and takeoff of aircraft.

Step 4: Option (B) “Hangar” is a large enclosed building structure designed specifically to hold aircraft in a protected environment for storage, servicing, and structural maintenance.

Step 5: Option (C) “Apron” is the designated area where aircraft are parked, unloaded, refueled, or boarded, but it is open to the elements and not an enclosed building.

Step 6: Option (D) “Terminal” is the main building infrastructure where passengers transfer between ground transportation and the facilities for boarding aircraft. Thus, hangar is the correct term.

Final Answer:

Answer: (B)

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Q16.**Solution****Concept:**

The concept focuses on fundamental aerodynamics. Flight is governed by the equilibrium and interaction of the four primary forces: lift, weight, thrust, and drag, which act in opposing vertical and horizontal pairs.

Solution:

Step 1: Identify the spatial directions of the four principal aerodynamic forces acting on an aircraft.

Step 2: Thrust acts forward, propelling the aircraft, while drag acts as the opposing rearward aerodynamic resistance force. These two form the horizontal axis pair.

Step 3: Weight acts downwards due to gravity, pulling the mass of the aircraft toward the center of the Earth.

Step 4: To lift off the ground and maintain level flight, an upward vertical aerodynamic force must be generated by the wings to directly counteract and exceed the downward force of weight.

Step 5: This upward acting aerodynamic force is explicitly defined as “Lift”. Therefore, lift must overcome weight to enable flight. This matches Option (C).

Final Answer:

Answer: (C)

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Q17.

Solution**Concept:**

This item assesses knowledge of civil aviation regulatory frameworks in India. Every sovereign nation establishes a central national authority to enforce safety standards, register aircraft, and certify maintenance personnel.

Solution:

Step 1: Review the administrative scope of the choices provided within the Indian context.

Step 2: Option (A) “ICAO” stands for the International Civil Aviation Organization, which is a global United Nations agency that sets international standards but does not directly issue domestic licenses.

Step 3: Option (B) “FAA” is the Federal Aviation Administration, which regulates civil aviation within the United States.

Step 4: Option (C) “DGCA” stands for the Directorate General of Civil Aviation. This is the statutory national regulatory body operating under the Ministry of Civil Aviation in India. It is empowered to oversee air safety, license pilots, and issue licenses to Aircraft Maintenance Engineers (AME).

Step 5: Option (D) “EASA” is the European Union Aviation Safety Agency.

Step 6: Conclude that the DGCA is the Indian regulatory authority responsible for AME licensing.

Final Answer:

Answer: (C)

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Q18.**Solution****Concept:**

This question checks familiarity with significant milestones in Indian aviation history, specifically tracking the pioneering individuals who established commercial air transport networks within the subcontinent.

Solution:

Step 1: Identify the historical figure tied to the inception of civil aviation in India.

Step 2: In 1929, Jehangir Ratanji Dadabhoy Tata (J.R.D. Tata) became the very first individual in India to be awarded a pilot's license, holding certificate number "1".

Step 3: In 1932, he founded Tata Airlines, which was India's first commercial carrier and later transformed into Air India, earning him the title of the "Father of Indian Civil Aviation".

Step 4: Evaluate the other options. Homi Bhabha was a nuclear physicist, Satish Dhawan and Vikram Sarabhai were pioneers of the Indian space program (ISRO).

Step 5: Confirm that J.R.D. Tata is the correct figure, matching Option (A).

Final Answer:

Answer: (A)

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Q19.**Solution****Concept:**

The concept involves the operational mechanics of the pitot-static system. Flight instruments use pressure differences between stagnant air (static pressure) and moving ram air (pitot pressure) to calculate flight parameters.

Solution:

Step 1: Analyze how the different pressure flight instruments function.

Step 2: The Altimeter and the Vertical Speed Indicator connect exclusively to the static port system to detect changes in atmospheric pressure caused by changes in altitude.

Step 3: The Attitude Indicator is a gyroscopic instrument and does not rely on direct aerodynamic pressure inputs from pitot or static ports.

Step 4: The Airspeed Indicator measures how fast the aircraft is moving through the air mass. To achieve this, it requires both total ram air pressure from the forward-facing pitot tube and ambient static air pressure from the static port.

Step 5: The internal mechanics of the airspeed indicator subtract the static pressure from the total pressure to compute dynamic pressure, which directly indicates airspeed. This matches option (C).

Final Answer:

Answer: (C)

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Q20.

Solution**Concept:**

The topic explores basic physics applications in aviation, focusing on classical Newtonian mechanics. Propulsion systems rely on conservation of momentum to move aircraft forward.

Solution:

Step 1: Recall the definition of Newton's Third Law of Motion, which states that for every action force, there is an equal and opposite reaction force.

Step 2: Examine the physical mechanism of a jet engine. The engine draws in air, compresses it, mixes it with aviation fuel, and ignites the mixture to cause rapid expansion.

Step 3: This process forces combustion exhaust products out through the rear nozzle at high velocity. The backward acceleration of these exhaust gases represents the "Action" force.

Step 4: According to Newton's law, this action produces an immediate equal and opposite forward force. This forward reactive force pushes the engine housing forward, generating "Thrust".

Step 5: Review the choices. Option (B) accurately describes this action-reaction dynamic, identifying the backward ejection of exhaust gases as the cause of thrust.

Final Answer: The high-velocity backward ejection of exhaust gases

Answer: (B)

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Q21.

Solution**Concept:**

This question checks global aviation geography and administrative infrastructure. The International Civil Aviation Organization (ICAO) standardizes global air navigation and safety practices.

Solution:

Step 1: Identify the institutional nature of ICAO. It is a specialized agency of the United Nations established following the 1944 Chicago Convention.

Step 2: Recall the fixed geographic location of its primary administrative headquarters.

Step 3: Evaluate the options. While many UN organizations are located in Geneva or Paris, ICAO's permanent central headquarters is located in Montreal, Quebec, Canada.

Step 4: Verify the options provided. Option (A) Geneva, Option (B) Montreal, Option (C) Washington D.C., and Option (D) Paris.

Step 5: Confirm that option (B) represents the correct geographical location.

Final Answer: Montreal, Canada

Answer: (B)

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Q22.

Solution**Concept:**

This history question focuses on early aviation milestones. The birth of modern powered aviation is defined by the successful flight of a crewed, heavier-than-air machine under mechanical power.

Solution:

Step 1: Identify the historic achievement of Orville and Wilbur Wright on December 17, 1903.

Step 2: Recall the exact location where they conducted their successful powered flights with the Flyer I aircraft.

Step 3: The brothers conducted their flight trials at a location selected for its consistent winds and soft sand landing surfaces, which was near Kitty Hawk, North Carolina, USA.

Step 4: Cross-examine the choices. Dayton, Ohio (Option A) was their home town and bike shop location, but not where the first flight occurred. Paris and St. Louis are historically incorrect for this event.

Step 5: Identify Option (B) Kitty Hawk, North Carolina as the correct location of this aviation milestone.

Final Answer: Kitty Hawk, North Carolina

Answer: (B)

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Q23.

Solution**Concept:**

The concept examines primary flight control surfaces and aircraft axes of rotation. An aircraft moves within three-dimensional space along three mutually perpendicular axes: longitudinal, lateral, and vertical.

Solution:

Step 1: Identify the three rotational axes and their corresponding primary control surfaces.

Step 2: The longitudinal axis runs from nose to tail, control around it is called rolling, which is governed by the ailerons.

Step 3: The vertical axis passes vertically through the center of gravity, control around it is called yawing, which is governed by the rudder.

Step 4: The lateral axis runs wingtip to wingtip. Movement around this axis causes the aircraft's nose to move up or down, a motion called "pitching".

Step 5: Identify the control surface responsible for pitching. The elevators, located on the horizontal stabilizer of the tail assembly, alter the aerodynamic lift of the tail to control pitch. This corresponds to Option (C).

Final Answer:

Answer: (C)

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Q24.

Solution**Concept:**

The concept addresses standard SI units utilized across engineering and aviation science domains. It requires identifying the base metric standard used to measure force per unit area.

Solution:

Step 1: Define pressure in engineering terms: $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$.

Step 2: Identify the base SI units for force and area. Force is measured in Newtons (N), and area is measured in square meters (m²).

Step 3: Combine these units to establish the derived pressure unit: Newtons per square meter (N/m²).

Step 4: Identify the specific name given to this derived unit within the International System of Units (SI). One Newton per square meter is defined as one Pascal (Pa).

Step 5: Evaluate the options. Newton (Option A) measures force. Joule (Option C) measures energy. Watt (Option D) measures power. Pascal (Option B) measures pressure.

Final Answer:

Answer: (B)

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Q25.

Solution**Concept:**

This general awareness item tests knowledge of India's domestic aerospace industry infrastructure. Hindustan Aeronautics Limited (HAL) is a major state-owned defense and aerospace corporation.

Solution:

Step 1: Review the history and setup of Hindustan Aeronautics Limited.

Step 2: HAL was originally founded as Hindustan Aircraft in 1940 and was later reorganized under the Ministry of Defence.

Step 3: Identify the primary hub of aerospace manufacturing and engineering design in India.

Step 4: While HAL operates manufacturing facilities across multiple cities (such as Nashik, Koraput, and Kanpur), its corporate headquarters and primary research hubs have been located in Bengaluru, Karnataka since its inception.

Step 5: Select Option (C) Bengaluru as the correct answer.

Final Answer:

Answer: (C)

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Q26.**Solution****Concept:**

This basic aviation science topic involves high-altitude physics and human physiology. As altitude increases, atmospheric pressure drops, leading to an environment that cannot support human respiratory needs without mechanical intervention.

Solution:

Step 1: Analyze environmental changes that occur at high cruising altitudes, such as 30,000 to 40,000 feet. At these heights, ambient atmospheric pressure is significantly lower than at sea level.

Step 2: Note the physiological effect of low pressure on the human body. Although the percentage of oxygen in the air remains around 21%, the lower total pressure reduces the partial pressure of oxygen. This makes it difficult for human lungs to transfer oxygen into the blood, leading to hypoxia (oxygen deprivation).

Step 3: Explain the role of cabin pressurization. By pumping compressed air into the sealed cabin, aircraft environmental systems simulate a lower, safe altitude environment (typically below 8,000 feet).

Step 4: This pressurization maintains adequate oxygen partial pressure, allowing passengers and crew to breathe normally without needing supplemental oxygen masks. This directly matches Option (B).

Final Answer:

To maintain adequate oxygen partial pressure and prevent hypoxia in passengers

Answer: (B)

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Q27.

Solution**Concept:**

This item verifies familiarity with foundational professional titles within civil aviation management and maintenance frameworks.

Solution:

Step 1: Analyze the acronym “AME” within the context of aircraft maintenance, engineering operations, and licensing regulations.

Step 2: Evaluate the provided options to identify the standard industry term.

Step 3: Option (A) “Aircraft Management Executive” describes a corporate role, not a technical license path.

Step 4: Option (B) “Aviation Maintenance Expert” is a descriptive phrase, not an official legal title.

Step 5: Option (C) “Aircraft Maintenance Engineer” is the official legal and professional designation for personnel licensed to certify the airworthiness of an aircraft after maintenance interventions. This matches option (C).

Final Answer:

Answer: (C)

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Q28.

Solution**Concept:**

This historical question explores early mail and commercial air routes in undivided pre-independence India, tracing the origins of national carrier routes.

Solution:

Step 1: Recall the historic details of the inaugural flight of Tata Airlines conducted by J.R.D. Tata in October 1932.

Step 2: Identify the route of this first flight. J.R.D. Tata piloted a single-engine De Havilland Puss Moth aircraft carrying airmail.

Step 3: The flight took off from Karachi (now in Pakistan) and flew to its primary Indian destination base, which was Bombay (now Mumbai), via Ahmedabad.

Step 4: Examine the choices to find the correct starting city option for the Indian leg of the service network. The route connected Karachi directly with Bombay.

Step 5: Select Option (A) Bombay as the correct city.

Final Answer:

Answer: (A)

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Q29.

Solution**Concept:**

The concept covers directional control aerodynamics. Movements of flight control surfaces create aerodynamic moments that rotate the aircraft around its center of gravity.

Solution:

Step 1: Identify the rudder's physical location on an aircraft. It is a movable control surface hinged to the trailing edge of the vertical stabilizer on the tail assembly.

Step 2: Analyze the axis of movement associated with the vertical tail plane. Deflecting the rudder changes the aerodynamic lift force on the tail, causing the aircraft to rotate around its vertical axis.

Step 3: Recall the technical aviation term for rotation about the vertical axis. This side-to-side nose movement is called "yawing".

Step 4: Evaluate the options based on these axis pairs. Roll along the longitudinal axis is controlled by ailerons (Option A). Pitch along the lateral axis is controlled by elevators (Option C).

Step 5: Match the rudder's function with Option (B), which states it controls yaw along the vertical axis.

Final Answer: To control yaw along the vertical axis

Answer: (B)

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Q30.

Solution**Concept:**

The topic addresses basic chemical prerequisites for combustion within internal combustion and turbine engine systems. Combustion is an exothermic chemical reaction between a fuel and an oxidizing agent.

Solution:

Step 1: Understand the chemical components required to sustain a fire or combustion process, often illustrated by the fire triangle: fuel, heat, and an oxidizing agent.

Step 2: Identify the fuel source in an aircraft engine, which is aviation turbine fuel (hydrocarbons).

Step 3: Identify the oxidizer required to react with the fuel inside the combustion chamber to release energy.

Step 4: Evaluate atmospheric gases. Nitrogen (Option A) is an inert diluent that does not support combustion. Carbon dioxide (Option D) is a product of combustion used to extinguish fires. Oxygen (Option C) is the chemical oxidizing agent required to sustain combustion reactions.

Step 5: Conclude that oxygen drawn from the ambient intake air is essential to support combustion within the engine chambers. This corresponds to Option (C).

Final Answer:

Answer: (C)

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Answer Key

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

