

AME CET English & General Awareness Sample Paper – 11

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. The ground engineer noticed a **minuscule** crack in the turbine blade during the routine pre-flight inspection.

- (A) Deep
- (B) Superficially wide
- (C) Tiny
- (D) Irrelevant

Q2. The maintenance team has been working on the aircraft fuselage ____ six hours without a break.

- (A) since
- (B) for
- (C) from



(D) during

Q3. Identify the part of the sentence that contains a grammatical error:

Neither the chief pilot nor the cabin crew members (A) / was aware of the sudden change (B) / in the weather routing instructions (C) / issued by the air traffic control (D).

(A) Neither the chief pilot nor the cabin crew members

(B) was aware of the sudden change

(C) in the weather routing instructions

(D) issued by the air traffic control

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

The technicians are calibrating the altimeter in the instrument laboratory.

(A) The altimeter was being calibrated by the technicians in the instrument laboratory.

(B) The altimeter is calibrated by the technicians in the instrument laboratory.

(C) The altimeter is being calibrated by the technicians in the instrument laboratory.

(D) The altimeter has been calibrated by the technicians in the instrument laboratory.

Q5. Find the correctly spelled word from the options below.

(A) Maintainance

(B) Maintenance

(C) Maintenence

(D) Mentenancce

Q6. ____ detected during the engine health monitoring analysis last week.

(A) was

(B) were



(C) has been

(D) is

Q7. Select the option that best substitutes the given phrase:

"A person who is qualified to inspect, maintain, and certify the airworthiness of an aircraft."

(A) Aviator

(B) Marshal

(C) Aircraft Maintenance Engineer

(D) Aeronautical Meteorologist

Q8. Choose the option that correctly transforms the sentence into indirect speech:

The air traffic controller said to the pilot, "Do not descend below three thousand feet."

(A) The air traffic controller advised the pilot to not descend below three thousand feet.

(B) The air traffic controller instructed the pilot not to descend below three thousand feet.

(C) The air traffic controller said to the pilot that he must not descend below three thousand feet.

(D) The air traffic controller warned the pilot for descending below three thousand feet.

Q9. Choose the option that best expresses the opposite meaning of the underlined word:

The captain decided to postpone the takeoff because the weather conditions at the destination airport were **turbulent**.

(A) Stormy

(B) Unpredictable

(C) Serene



(D) Freezing

Q10. Direction for Q10 & Q11: Read the short passage below and answer the questions based on its content.

RAM (Ram Air Turbine) is an emergency power system installed on modern aircraft. It consists of a small propeller-driven turbine that is deployed from the aircraft fuselage or wing when primary power systems—both electrical and hydraulic—are completely lost. When deployed, the rushing airflow outside the moving aircraft spins the turbine, which in turn powers a hydraulic pump or an electrical generator. This provides just enough critical power to the cockpit instruments and essential flight control systems to allow the pilots to fly and land the aircraft safely. Because it relies entirely on the vehicle's forward speed to operate, it becomes less effective as the aircraft slows down during the final approach.

According to the passage, what drives the turbine of a RAM system?

- (A) Fuel from the standby auxiliary tanks
- (B) The battery pack located in the avionics bay
- (C) The external airflow generated by the aircraft's motion
- (D) Exhaust gases coming from the main jet engine

Q11. Based on the text provided in the previous question, what is an operational limitation of the Ram Air Turbine?

- (A) It cannot supply power to hydraulic pumps.
- (B) Its effectiveness decreases as the aircraft's speed reduces.
- (C) It takes too long to deploy from the fuselage.
- (D) It works only when the main engines are running at full thrust.

Q12. Select the option that rectifies the underlined grammatical error in the sentence:
If the captain would have checked the weather radar earlier, he would have avoided the thunderstorm cell.

- (A) had checked



- (B) checked
- (C) would check
- (D) has checked

Q13. Choose the option that best explains the meaning of the underlined idiom:

The apprentice mechanic was told to follow the manual **to the letter** during the landing gear overhaul.

- (A) To read it out loud to the supervisor
- (B) To pay attention only to the diagrams
- (C) To obey the instructions exactly and precisely
- (D) To look for typographical errors in the text

Q14. Identify the option that provides the most appropriate word to complete the sentence:

Due to the ____ drop in cabin pressure, the emergency oxygen masks automatically dropped from the overhead panels.

- (A) deliberate
- (B) precipitous
- (C) gradual
- (D) stagnant

Q15. Choose the option that is grammatically correct and free of errors.

- (A) Every passenger are requested to fasten their seatbelts before taxiing.
- (B) Every passenger is requested to fasten his or her seatbelt before taxiing.
- (C) Every passengers is requested to fasten their seatbelts before taxiing.
- (D) Every passenger are requested to fasten his or her seatbelt before taxiing.



Part B: General Awareness

- Q16.** Which of the following fundamental aerodynamic forces acts vertically upward to oppose the weight of an aircraft during steady, level flight?
- (A) Thrust
 - (B) Drag
 - (C) Lift
 - (D) Torque
- Q17.** Where are the headquarters of the International Civil Aviation Organization (ICAO) located?
- (A) Geneva, Switzerland
 - (B) Montreal, Canada
 - (C) Washington D.C., USA
 - (D) Paris, France
- Q18.** Who was the pioneering figure who obtained the first commercial pilot's license in India and founded India's first commercial airline, Tata Airlines?
- (A) J.R.D. Tata
 - (B) Jamsetji Tata
 - (C) Homi Bhabha
 - (D) Satish Dhawan
- Q19.** Which primary flight control surface is responsible for controlling the 'roll' axis of an aircraft?
- (A) Elevator
 - (B) Rudder
 - (C) Flap
 - (D) Aileron



- Q20.** In India, which regulatory body is responsible for framing civil aviation regulations, licensing pilots, and issuing Airworthiness Certificates to aircraft?
- (A) Airport Authority of India (AAI)
 - (B) Ministry of Defence (MoD)
 - (C) Directorate General of Civil Aviation (DGCA)
 - (D) Bureau of Civil Aviation Security (BCAS)
- Q21.** Hindustan Aeronautics Limited (HAL) has its corporate headquarters located in which Indian city?
- (A) Hyderabad
 - (B) Bengaluru
 - (C) New Delhi
 - (D) Nasik
- Q22.** Which flight instrument utilizes both static pressure and pitot pressure to measure the forward speed of an aircraft through the air?
- (A) Altimeter
 - (B) Vertical Speed Indicator
 - (C) Airspeed Indicator
 - (D) Turn Coordinator
- Q23.** According to principles of basic science, jet propulsion and the generation of forward thrust in an aircraft engine are direct applications of which physical law?
- (A) Bernoulli's Principle of Fluid Dynamics
 - (B) Newton's Third Law of Motion
 - (C) Pascal's Law of Hydrostatic Pressure
 - (D) Kepler's Second Law of Planetary Motion



- Q24.** In which year did the Wright Brothers achieve the world's first sustained and controlled powered flight in North Carolina?
- (A) 1899
 - (B) 1903
 - (C) 1911
 - (D) 1920
- Q25.** What is the main reason why commercial aircraft cabins are artificially pressurized when flying at high altitudes, typically above 10,000 feet?
- (A) To prevent structural damage caused by low external ambient temperature
 - (B) To ensure a sufficient partial pressure of oxygen for safe human respiration
 - (C) To increase the aerodynamic fuel efficiency of the turbojet engines
 - (D) To reduce the generation of static electricity on the aircraft skin
- Q26.** What is the standard SI unit used to measure pressure in scientific and engineering computations?
- (A) Bar
 - (B) PSI (Pounds per Square Inch)
 - (C) Pascal
 - (D) Atmosphere
- Q27.** Consider the following statements regarding the role of oxygen in aviation systems:
1. Oxygen gas itself is highly flammable and burns with a blue flame.
 2. Oxygen acts as an oxidizing agent that supports and accelerates combustion.
- Which of the statements given above is/are correct?
- (A) 1 only
 - (B) 2 only
 - (C) Both 1 and 2
 - (D) Neither 1 nor 2



- Q28.** In the field of aviation, what does the acronym 'DGCA' stand for?
- (A) Department of General Civil Aviation
 - (B) Directorate General of Civil Aviation
 - (C) Division of Ground Control and Aviation
 - (D) Directorate General of Cargo and Aircraft
- Q29.** Which flight control instrument uses a barometric capsule to measure changes in atmospheric pressure to display the aircraft's height above a specific sea level datum?
- (A) Attitude Indicator
 - (B) Altimeter
 - (C) Gyro Horizon
 - (D) Heading Indicator
- Q30.** Which Indian airport recently operationalized a state-of-the-art dual elevated taxiway system to enhance runway throughput and lower carbon emissions?
- (A) Indira Gandhi International Airport, Delhi
 - (B) Chhatrapati Shivaji Maharaj International Airport, Mumbai
 - (C) Kempegowda International Airport, Bengaluru
 - (D) Cochin International Airport, Kochi



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

The question tests vocabulary comprehension, specifically identifying synonyms in an aviation-related operational context. The term "minuscule" originates from the Latin word *minusculus*, meaning extremely small. In structural engineering and aircraft inspection, evaluating the scale of structural anomalies like cracks is vital to determining flight safety.

Solution:

Step 1: Analyze the meaning of the word "minuscule" within the sentence. The sentence describes a ground engineer inspecting a turbine blade and finding a specific type of crack during a pre-flight routine check.

Step 2: Evaluate option (A) "Deep". Deep refers to extending far down from the top or surface, which describes depth rather than the tiny physical scale of the crack's footprint.

Step 3: Evaluate option (B) "Superficially wide". This describes a wide surface area, which contradicts the intrinsic meaning of minuscule.

Step 4: Evaluate option (C) "Tiny". Tiny means extremely small or minute, matching the precise definition of minuscule.

Step 5: Evaluate option (D) "Irrelevant". Any crack found on a turbine blade during an airworthiness inspection is highly relevant to safety, making this contextual choice incorrect.

Step 6: Consequently, "Tiny" is the most accurate synonym for the word underlined in the text.

Final Answer:

Answer: (C)

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Q2.

Solution**Concept:**

This grammar question tests the proper usage of temporal prepositions, specifically distinguishing between "since" and "for" when expressing durations of time within the perfect continuous tense framework.

Solution:

Step 1: Examine the structure of the given sentence: "The maintenance team has been working on the aircraft fuselage _____ six hours without a break."

Step 2: Identify the tense used in the independent clause. The phrase "has been working" establishes that the action is in the present perfect continuous tense.

Step 3: Evaluate the time phrase following the blank space, which is "six hours". This phrase indicates a measurable total duration or span of time rather than a specific starting calendar date or clock time.

Step 4: Apply the grammatical rule governing duration prepositions. The preposition "for" is strictly used to denote a specific period or duration of time (e.g., for six hours, for three days). The preposition "since" is strictly reserved to denote a specific starting point in time (e.g., since 4 o'clock, since Monday).

Step 5: Compare the remaining options. Option (C) "from" typically indicates a starting point and requires a corresponding "to" or "until", while option (D) "during" implies an event happening within a timeframe but does not correctly couple with the present perfect continuous tense indicating ongoing accumulation of hours.

Step 6: Therefore, the preposition "for" is the grammatically correct choice to complete the sentence seamlessly.

Final Answer:

Answer: (B)

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Q3.

Solution**Concept:**

This question covers subject-verb agreement rules when dealing with compound subjects joined by the correlative conjunctions "neither... nor". The proximity rule dictates the grammatical agreement in such sentences.

Solution:

Step 1: Read and segment the complete sentence to analyze its individual clauses and structural components. The sentence reads: "Neither the chief pilot nor the cabin crew members was aware of the sudden change in the weather routing instructions issued by the air traffic control."

Step 2: Identify the subject components. The compound subject consists of "the chief pilot" (singular noun) and "the cabin crew members" (plural noun), which are joined by the correlative conjunction configuration "Neither... nor".

Step 3: Apply the specific grammatical rule for compound subjects linked by "neither... nor". The rule states that the verb must agree in number with the closer subject component. In this specific configuration, the plural noun "members" is located closest to the verb.

Step 4: Evaluate the current verb form used in segment (B), which is "was". The verb "was" is singular and is grammatically incompatible with the plural subject "members". It must be replaced with the plural past-tense verb "were".

Step 5: Review options (A), (C), and (D) to ensure they do not possess any structural or stylistic errors. These parts are constructed correctly.

Step 6: Thus, part (B) contains the error because it utilizes an incorrect singular verb form.

Final Answer: was aware of the sudden change

Answer: (B)

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Q4.

Solution**Concept:**

This exercise involves transforming an active voice sentence into its corresponding passive voice form. The core grammatical principle requires preserving the original aspect and tense, which in this instance is the present continuous tense, while swapping the roles of the subject and object.

Solution:

Step 1: Analyze the syntax of the active voice sentence: "The technicians (Subject) are calibrating (Present Continuous Verb Phrase) the altimeter (Object) in the instrument laboratory (Adverbial Adjunct)."

Step 2: Shift the object of the active sentence, "the altimeter", into the prominent subject position of the new passive sentence. Since "the altimeter" is a singular noun, it requires a singular verb arrangement.

Step 3: Convert the present continuous verb form "are calibrating" into its passive equivalent. The structural formula for passive voice in the present continuous tense is: Subject + is/am/are + being + Past Participle of the Main Verb.

Step 4: Apply this formula directly to the singular subject. The verb phrase becomes "is being calibrated".

Step 5: Append the original agent using the preposition "by", turning it into "by the technicians", followed by the unchanged location modifier. This constructs the sentence: "The altimeter is being calibrated by the technicians in the instrument laboratory."

Step 6: Evaluate the alternative choices. Option (A) utilizes the past continuous tense. Option (B) utilizes the simple present tense. Option (D) utilizes the present perfect tense. Therefore, option (C) is the only sentence that correctly preserves the tense.

Final Answer: The altimeter is being calibrated by the technicians in the instrument laboratory.

Answer: (C)

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

This question focuses on spelling accuracy for technical terminology frequently used in the aviation industry. Standard English spelling conventions require distinct vowel arrangements for nouns derived from specific base verbs.

Solution:

Step 1: Examine the base verb from which the noun is derived, which is "maintain". While the verb contains the letters "tain", its nominal form undergoes a vowel shift according to conventional etymological rules.

Step 2: Analyze Option (A) "Maintainance". This is a frequent spelling error made by individuals who directly append the suffix "-ance" to the intact verb form "maintain" without applying the required vowel reduction.

Step 3: Analyze Option (B) "Maintenance". This spelling accurately reflects the required structural modification where the middle syllable transforms from "tain" to "ten". The correct configuration is M-A-I-N-T-E-N-A-N-C-E.

Step 4: Analyze Option (C) "Maintenence". This option incorrectly substitutes the letter "a" in the final syllable with an "e".

Step 5: Analyze Option (D) "Mentenance". This version introduces a double consonant error at the end and alters the first vowel inappropriately.

Step 6: Based on this clear comparative analysis, option (B) represents the uniquely correct spelling of the word.

Final Answer: Maintenance

Answer: (B)

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Q6.

Solution**Concept:**

This problem focuses on subject-verb agreement rules governing collective quantity expressions, specifically the phrase "a number of" versus "the number of". These expressions dictate whether a singular or plural verb configuration must be utilized based on structural grammatical norms.

Solution:

Step 1: Read the complete sentence framework carefully: "A number of systemic anomalies _____ detected during the engine health monitoring analysis last week."

Step 2: Isolate and identify the complete subject phrase, which is "A number of systemic anomalies".

Step 3: Apply the established grammatical rule for this quantifier. The expression "a number of" acts as a plural quantifier meaning "several" or "many", and it invariably demands a plural verb form. In contrast, the distinct phrase "the number of" designates a single specific collective mathematical value and demands a singular verb form.

Step 4: Determine the temporal marker in the sentence to select the appropriate tense. The inclusion of the phrase "last week" specifies that the action occurred entirely in a completed past timeframe, eliminating present-tense options.

Step 5: Evaluate the available choices based on these plural past-tense criteria. Option (A) "was" is singular. Option (C) "has been" is singular and present perfect. Option (D) "is" is singular and present tense. Option (B) "were" is plural and past tense.

Step 6: Therefore, the plural past-tense verb "were" is the structurally correct choice.

Final Answer:

Answer: (B)

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Q7.

Solution**Concept:**

This exercise tests professional terminology and definitions within civil aviation. It requires matching a detailed description of professional responsibilities with the precise, legally recognized job title.

Solution:

Step 1: Analyze the phrase provided in the question description: "A person who is qualified to inspect, maintain, and certify the airworthiness of an aircraft."

Step 2: Breakdown option (A) "Aviator". An aviator refers generally to an aircraft pilot or flight crew member responsible for operating the control flight surfaces during flight, not the mechanical maintenance and certification.

Step 3: Breakdown option (B) "Marshal". An aircraft marshal is a ground controller who guides aircraft into exact parking positions via visual signaling flags or wands.

Step 4: Breakdown option (C) "Aircraft Maintenance Engineer". An Aircraft Maintenance Engineer (AME) is a highly specialized professional who undergoes rigorous technical training and holds a regulatory license giving them the authority to service, inspect, repair, and officially sign the certificate of airworthiness release before flight operations.

Step 5: Breakdown option (D) "Aeronautical Meteorologist". This professional studies and forecasts atmospheric conditions and weather patterns to assist flight planning teams.

Step 6: Consequently, the definition perfectly matches the title of Aircraft Maintenance Engineer.

Final Answer: Aircraft Maintenance Engineer

Answer: (C)

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Q8.

Solution**Concept:**

This question covers the converting of direct speech into indirect (reported) speech for imperative commands or instructions. Transforming imperative statements requires replacing the reporting verb with an appropriate directive verb and utilizing an infinitive phrase structure.

Solution:

Step 1: Study the original sentence in direct quotation marks: The air traffic controller said to the pilot, "Do not descend below three thousand feet."

Step 2: Identify the communicative intent of the sentence. An air traffic controller issuing an instruction to an operational aircraft represents an authoritative command or technical instruction rather than simple advice.

Step 3: Convert the reporting verb "said to" into a contextually appropriate directive verb such as "instructed" or "ordered".

Step 4: Address the negative imperative instruction "Do not descend". The structural rule for converting a negative imperative sentence requires changing "do not + verb" into the negative infinitive layout: "not + to-infinitive" (not to descend).

Step 5: Check option (A). It uses "to not descend", which represents an incorrect split-infinitive configuration in standard reporting structures, and uses "advised" which misrepresents the authoritative nature of the instruction. Option (C) keeps the text wordy with "that he must not". Option (D) incorrectly alters the prepositional framework to "for descending".

Step 6: Review option (B): "The air traffic controller instructed the pilot not to descend below three thousand feet." This sentence aligns with all structural grammar requirements.

Final Answer: The air traffic controller instructed the pilot not to descend below three thousand feet.

Answer: (B)

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

This vocabulary query focuses on antonym identification. The goal is to determine the exact opposite meaning of the highlighted term based on its context within meteorological and aviation frameworks.

Solution:

Step 1: Review the context of the sentence: The captain postpones the takeoff because the weather conditions at the target destination are described as "turbulent".

Step 2: Define "turbulent". In meteorology and fluid dynamics, turbulent signifies violent, chaotic, unstable, moving irregularly, or severely agitated atmospheric airflow conditions.

Step 3: Evaluate Option (A) "Stormy". Stormy is a close synonym for turbulent, representing violent weather conditions.

Step 4: Evaluate Option (B) "Unpredictable". Unpredictable describes a state that cannot be foreseen, which shares a conceptual characteristic with the randomness of turbulence.

Step 5: Evaluate Option (C) "Serene". Serene means calm, peaceful, tranquil, and completely unagitated. In the context of atmospheric weather tracking, a serene sky represents the exact physical opposite of a turbulent sky.

Step 6: Evaluate Option (D) "Freezing". Freezing refers purely to low thermal parameters, which is a different category of measurement entirely.

Step 7: Therefore, "Serene" stands out as the true antonym for the word turbulent.

Final Answer:

Answer: (C)

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

This reading comprehension question demands a literal extraction of facts explicitly contained within the provided technical reading text, avoiding external assumptions or outside engineering facts.

Solution:

Step 1: Locate the specific section of the text that discusses what causes the Ram Air Turbine to spin or drive its mechanical parts.

Step 2: Scan the text to find the sentence stating: "When deployed, the rushing airflow outside the moving aircraft spins the turbine, which in turn powers a hydraulic pump or an electrical generator."

Step 3: Match this direct text evidence against the provided multiple-choice responses.

Step 4: Analyze option (A) and (B). The text states that the RAM is deployed precisely when primary power systems—including electrical—are completely lost, and it mentions nothing about standby fuel tanks or avionics battery packs driving it.

Step 5: Analyze option (D). The text says it is deployed when regular power systems are lost, not driven by main jet engine exhaust gases.

Step 6: Option (C) states "The external airflow generated by the aircraft's motion", which matches the passage text describing "rushing airflow outside the moving aircraft".

Final Answer: The external airflow generated by the aircraft's motion

Answer: (C)

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Q11.

Solution**Concept:**

This question focuses on reading comprehension and requires evaluating text statements to identify an operational constraint or limitation explicitly highlighted by the author.

Solution:

Step 1: Review the text carefully, focusing specifically on the sentences towards the end that mention functional limitations, constraints, or drops in performance.

Step 2: Identify the text statement: "Because it relies entirely on the vehicle's forward speed to operate, it becomes less effective as the aircraft slows down during the final approach."

Step 3: Evaluate option (A) based on this evidence. The text explicitly states that it powers a hydraulic pump, making option (A) incorrect.

Step 4: Evaluate option (C) and (D). The text does not make any statements concerning slow deployment times or a requirement for the main engines to run at full thrust to make the RAM function.

Step 5: Examine option (B) "Its effectiveness decreases as the aircraft's speed reduces." This matches the passage text stating that "it becomes less effective as the aircraft slows down".

Step 6: Consequently, option (B) is the supported fact-based answer derived from the reading passage.

Final Answer: Its effectiveness decreases as the aircraft's speed reduces.

Answer: (B)

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Q12.

Solution**Concept:**

This structural question focuses on the conditional sentence matrix, specifically the third conditional format, which addresses imaginary or hypothetical past events and their outcomes.

Solution:

Step 1: Identify the components of the conditional sentence: "If the captain would have checked the weather radar earlier, he would have avoided the thunderstorm cell."

Step 2: Analyze the principal independent clause containing the consequence: "he would have avoided the thunderstorm cell." The structure "would have + past participle" indicates that this is a standard third conditional statement.

Step 3: Recall the structural rule governing third conditional constructions. The subordinate "if" clause (the condition) must be structured using the past perfect tense (had + past participle), while the main clause (the result) uses would have + past participle.

Step 4: Identify the common error in the prompt sentence. Placing the modal verb construct "would have" inside the conditional "if" clause is a grammatical error. The verb must be changed to the past perfect form "had checked".

Step 5: Compare the available response options. Option (A) provides "had checked", which fixes the error. Option (B) is simple past, option (C) is a modal present form, and option (D) is present perfect.

Step 6: Therefore, option (A) is the grammatically correct choice to repair the sentence.

Final Answer:

Answer: (A)

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Q13.

Solution**Concept:**

This question focuses on decoding the idiomatic phrase "to the letter." Idioms are expressions whose meanings cannot be understood literally from the individual words but convey a distinct figurative meaning widely established by usage.

Solution:

Step 1: Read the sentence to gather contextual information: "The apprentice mechanic was told to follow the manual **to the letter** during the landing gear overhaul."

Step 2: Analyze the context. Overhauling an aircraft's critical landing gear system requires extreme care, precise alignment, and adherence to specific technical specifications.

Step 3: Define the idiomatic phrase "to the letter". This idiom means to carry out a set of commands, instructions, or rules with total precision, exactly as written, without omitting any detail or exercising personal interpretation.

Step 4: Evaluate the options. Option (A) suggests a literal interpretation involving speaking aloud. Option (B) limits the instruction to diagrams. Option (D) changes the meaning to proofreading for typos.

Step 5: Compare these with option (C): "To obey the instructions exactly and precisely." This matches the definition of the idiom perfectly.

Step 6: Therefore, option (C) is the correct choice.

Final Answer: To obey the instructions exactly and precisely

Answer: (C)

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

This sentence completion task requires choosing an adjective that contextually and logically fits an aviation system emergency situation involving cabin depressurization.

Solution:

Step 1: Analyze the mechanics of the event described in the sentence text: "Due to the _____ drop in cabin pressure, the emergency oxygen masks automatically dropped..."

Step 2: Understand the physical design trigger of aircraft passenger oxygen masks. The automated deployment system is engineered to drop passenger masks instantly when there is a sudden, sharp, steep, or rapid loss of cabin air pressure.

Step 3: Evaluate Option (A) "deliberate". This implies an intentional act by the flight systems, which does not fit an emergency oxygen mask deployment scenario.

Step 4: Evaluate Option (B) "precipitous". The word precipitous means extremely sharp, steep, rapid, or sudden. In fluid and atmospheric dynamics, a "precipitous drop" accurately describes a sudden, dangerous loss of pressure.

Step 5: Evaluate Option (C) "gradual". A slow, gradual pressure leak allows other control mechanisms to respond and would not typically cause an immediate automated system mask drop.

Step 6: Evaluate Option (D) "stagnant". Stagnant describes a static state with no movement, which contradicts the concept of a drop.

Step 7: Consequently, option (B) is the most contextually appropriate word.

Final Answer: precipitous

Answer: (B)

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Q15.**Solution****Concept:**

This exercise focuses on pronoun-antecedent agreement and subject-verb agreement involving the distributive pronoun adjective "every".

Solution:

Step 1: Analyze the subject structure of the sentences. The sentences begin with the word "Every". In English grammar, the word "every" is a distributive modifier that must always be followed immediately by a singular countable noun (e.g., passenger, not passengers). This eliminates option (C).

Step 2: Determine the verb agreement rule for singular subjects modified by "every". Although "every passenger" implies all passengers collectively, it treats them as individuals grammatically. Therefore, it requires a singular verb form. This eliminates options (A) and (D), which utilize the plural verb "are".

Step 3: Examine the remaining option, which is option (B): "Every passenger (Singular Subject) is (Singular Verb) requested to fasten his or her (Singular Pronoun) seatbelt before taxiing."

Step 4: Verify the pronoun-antecedent agreement in option (B). The singular gender-neutral pronoun pairing "his or her" aligns with the singular antecedent "passenger".

Step 5: Thus, option (B) satisfies all grammatical rules regarding subject-verb and pronoun-antecedent alignment.

Final Answer: Every passenger is requested to fasten his or her seatbelt before taxiing.

Answer: (B)

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

This question deals with basic aerodynamic principles and the four fundamental forces acting upon an aircraft during flight: lift, weight, thrust, and drag. Maintaining steady, unaccelerated flight requires equilibrium among these opposing forces.

Solution:

Step 1: Identify the vector orientations and definitions of the four primary forces operating on an aircraft.

Step 2: Thrust is generated by the aircraft's propulsion system and acts in a forward direction parallel to the flight path to overcome aerodynamic drag.

Step 3: Drag is the retarding force caused by disruption of airflow around the aircraft structure and acts rearward, opposing thrust.

Step 4: Weight is the downward force resulting from gravity acting upon the total mass of the aircraft, pulling it vertically toward the center of the Earth.

Step 5: Lift is generated primarily by the wings as they move through the air. According to aerodynamic principles, lift acts perpendicular to the flight path in a vertically upward direction, directly opposing the downward pull of aircraft weight.

Step 6: In steady, level flight, the vertical forces must balance exactly, meaning Lift equals Weight. Therefore, the force acting vertically upward to oppose weight is Lift.

Final Answer:

Answer: (C)

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Q17.

Solution**Concept:**

This question tests knowledge of international civil aviation governance institutions, specifically identifying the location of the headquarters of the International Civil Aviation Organization (ICAO).

Solution:

Step 1: Identify the organization. The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations established in 1944 by the Convention on International Civil Aviation (Chicago Convention) to coordinate international air navigation and foster safe, orderly growth.

Step 2: Review global administrative centers. Option (A) Geneva houses organizations like the WHO and WTO. Option (C) Washington D.C. hosts the World Bank and IMF. Option (D) Paris houses UNESCO.

Step 3: Recall the established headquarters location for ICAO. The permanent headquarters of the International Civil Aviation Organization is located in Montreal, Quebec, Canada.

Step 4: Match this administrative fact with the choices provided in the question. Option (B) corresponds to Montreal, Canada.

Final Answer: Montreal, Canada

Answer: (B)

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

This question covers historical milestones in Indian aviation, specifically identifying the pioneering figure who established commercial air transport in India.

Solution:

Step 1: Analyze the historical context of aviation in India. The prompt seeks the individual who received India's first commercial pilot license and founded Tata Airlines.

Step 2: Identify the accomplishments of Jehangir Ratanji Dadabhoy (J.R.D.) Tata. In 1929, J.R.D. Tata qualified for the first pilot's license issued in India.

Step 3: Trace the origin of commercial airlines in India. In 1932, J.R.D. Tata founded Tata Airlines as an air mail service, piloting its inaugural flight from Karachi to Bombay. This enterprise later expanded and was rebranded as Air India in 1946, forming the foundation of India's commercial aviation sector.

Step 4: Evaluate the other options. Jamsetji Tata was an industrial pioneer of the 19th century who passed away before the advent of powered aviation. Homi Bhabha was a nuclear physicist, and Satish Dhawan was an aerospace scientist focused on space propulsion systems.

Step 5: Thus, J.R.D. Tata is the historical figure described in the prompt.

Final Answer:

Answer: (A)

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

This question focuses on flight control aerodynamics and the primary control surfaces that govern an aircraft's movement around its three principal axes: pitch, roll, and yaw.

Solution:

Step 1: Define the three rotation axes of an aircraft: the longitudinal axis (running from nose to tail), the lateral axis (running wingtip to wingtip), and the vertical axis.

Step 2: Define roll, pitch, and yaw. Rotation around the lateral axis is called pitch. Rotation around the vertical axis is called yaw. Rotation around the longitudinal axis is called roll.

Step 3: Analyze the functions of primary flight control surfaces. The elevator is located on the horizontal stabilizer and controls movement around the lateral axis (pitch). The rudder is located on the vertical stabilizer and controls movement around the vertical axis (yaw).

Step 4: Analyze the function of the ailerons. Ailerons are hinged control surfaces attached to the trailing edge of each wing. Operating in opposition to one another, one moves upward while the other moves downward, altering lift characteristics to cause rotation around the longitudinal axis (roll).

Step 5: Differentiate secondary surfaces. Flaps are high-lift devices used primarily to increase lift and drag during takeoff and landing, not to control roll dynamics.

Step 6: Therefore, the aileron is the primary flight control surface responsible for managing the roll axis.

Final Answer: Aileron

Answer: (D)

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Q20.**Solution****Concept:**

This question covers national regulatory bodies within civil aviation, specifically identifying the agency responsible for safety oversight, licensing, and airworthiness certification in India.

Solution:

Step 1: Identify the roles of the organizations listed. The Airport Authority of India (AAI) manages civil aviation infrastructure, airport operations, and air traffic management services across the country.

Step 2: Identify the role of the Ministry of Defence (MoD), which oversees the armed forces and military aviation networks, not commercial civil aviation.

Step 3: Identify the role of the Bureau of Civil Aviation Security (BCAS), which is responsible for formulating security standards and protocols for civil flights and airport facilities.

Step 4: Identify the role of the Directorate General of Civil Aviation (DGCA). The DGCA is the regulatory body attached to the Ministry of Civil Aviation. It is legally tasked with safety oversight, processing pilot licenses, maintaining flight safety standards, enforcement of civil aviation regulations, and issuing Certificates of Airworthiness for civil aircraft registered in India.

Step 5: Match this regulatory profile with option (C).

Final Answer: Directorate General of Civil Aviation (DGCA)

Answer: (C)

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Q21.

Solution**Concept:**

This question focuses on corporate details of public sector undertakings within the Indian aerospace and defense manufacturing sector, specifically the location of the headquarters of Hindustan Aeronautics Limited (HAL).

Solution:

Step 1: Identify the corporation. Hindustan Aeronautics Limited (HAL) is an Indian state-owned aerospace and defense company involved in the design, fabrication, assembly, and maintenance of aircraft, jet engines, helicopters, and related avionics software.

Step 2: Trace the institutional history of HAL. Established originally as Hindustan Aircraft in 1940 by Walchand Hirachand, it was integrated into its modern public sector format with its operational and administrative center located in southern India.

Step 3: Locate the primary corporate headquarters. The primary corporate headquarters of Hindustan Aeronautics Limited is located in Bengaluru, Karnataka. Although HAL has major manufacturing and maintenance facilities across India—such as in Nasik, Koraput, Hyderabad, and Lucknow—its central administrative leadership operates out of Bengaluru.

Step 4: Match this location fact against the choices. Option (B) corresponds to Bengaluru.

Final Answer: Bengaluru

Answer: (B)

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Q22.

Solution**Concept:**

This question covers the mechanics of aircraft cockpit instruments, specifically focusing on the pitot-static system and how atmospheric pressure differences are utilized to measure flight parameters.

Solution:

Step 1: Identify how instruments utilize pressure inputs from the pitot tube and static ports. The pitot-static system provides pressure measurements to three primary instruments: the Altimeter, the Vertical Speed Indicator (VSI), and the Airspeed Indicator (ASI).

Step 2: Analyze the Altimeter. The altimeter connects exclusively to the static port, measuring ambient atmospheric pressure changes to determine height above a set reference level.

Step 3: Analyze the Vertical Speed Indicator. The VSI also relies entirely on static pressure changes, using a calibrated leak to measure the rate of change of pressure to display climb or descent rates.

Step 4: Analyze the Airspeed Indicator. The ASI is the only instrument connected to both the pitot tube and the static port. The pitot tube captures dynamic pressure (total pressure of impact air due to forward motion), while the static port measures ambient air pressure.

Step 5: Explain the internal mechanism of the ASI. The instrument isolates dynamic pressure by subtracting the ambient static pressure from the total pressure captured by the pitot tube. This pressure difference moves an internal diaphragm, displaying the aircraft's forward speed through the air.

Step 6: Therefore, the instrument that uses both static and pitot inputs is the Airspeed Indicator.

Final Answer: Airspeed Indicator

Answer: (C)

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Q23.

Solution**Concept:**

This question focuses on classical physics principles applied to aviation propulsion systems. It involves identifying the underlying physical law that governs jet engine operation and thrust generation.

Solution:

Step 1: Analyze how a jet engine generates propulsion. A jet engine draws in air, compresses it, mixes it with fuel, and ignites the mixture. This combustion reaction forces a high-velocity stream of exhaust gases out the rear nozzle of the engine.

Step 2: Apply physical laws to this system. The accelerating exhaust gas mass forced out the rear represents a directional action force. According to basic physics mechanics, this action results in an equal and opposite reaction force.

Step 3: Identify Newton's Third Law of Motion, which states that for every action, there is an equal and opposite reaction. The forward force (thrust) that drives the aircraft forward is the reaction to the high-velocity gas mass ejected rearward.

Step 4: Evaluate the other options. Bernoulli's Principle explains lift generation across an airfoil but does not drive jet reaction propulsion mechanics. Pascal's Law governs enclosed fluid pressure transmission in hydraulic lines, and Kepler's laws describe planetary orbital mechanics.

Step 5: Thus, jet propulsion is a direct application of Newton's Third Law of Motion.

Final Answer:

Answer: (B)

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Q24.

Solution**Concept:**

This question covers historical milestones in global aviation, specifically identifying the exact year the Wright Brothers achieved their first successful powered, controlled, sustained flight.

Solution:

Step 1: Review the historical timeline of early aviation and experimental gliders built by Orville and Wilbur Wright.

Step 2: Identify the date of their breakthrough flight. The Wright brothers achieved the first sustained, controlled flight of a powered, heavier-than-air aircraft on December 17, 1903, at Kitty Hawk, North Carolina.

Step 3: Match this historical date against the multiple-choice options provided in the question.

Step 4: Option (A) 1899 refers to their early kite and glider experimentation phases. Options (C) 1911 and (D) 1920 represent eras well after powered flight had already been established globally.

Step 5: Option (B) corresponds to the year 1903.

Final Answer: 1903

Answer: (B)

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Q25.

Solution**Concept:**

This question covers basic human physiology and atmospheric physics principles applied to high-altitude flight operations. It requires understanding why passenger cabins must be artificially pressurized at high altitudes.

Solution:

Step 1: Analyze how atmospheric properties change with altitude. As an aircraft climbs higher into the atmosphere, ambient air pressure decreases and the air becomes less dense.

Step 2: Understand the physiological impact of low atmospheric pressure on humans. Although the percentage of oxygen in the air remains relatively constant at roughly 21 percent, the total atmospheric pressure drops significantly at high altitudes. This decrease lowers the partial pressure of oxygen, making it difficult for the human lungs to transfer oxygen into the bloodstream, which can cause hypoxia.

Step 3: Evaluate the primary purpose of cabin pressurization systems. Pressurization systems artificially maintain internal cabin pressure at a level equivalent to an altitude below 8,000 feet, even when the aircraft is cruising above 30,000 feet. This ensures there is sufficient partial pressure of oxygen to allow safe human respiration without supplementary oxygen masks.

Step 4: Evaluate the alternate options. Pressurization is not designed to protect against low external ambient temperatures, increase engine efficiency, or manage static electricity generation.

Step 5: Thus, option (B) represents the primary reason for cabin pressurization.

Final Answer: To ensure a sufficient partial pressure of oxygen for safe human respiration

Answer: (B)

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Q26.

Solution**Concept:**

This metric system question tests knowledge of International System of Units (SI) designations for physical quantities used in science and engineering fields.

Solution:

Step 1: Identify the standard unit used to measure pressure, which is defined as force per unit area.

Step 2: Examine option (A) "Bar". The bar is a metric unit of pressure, but it is not officially recognized as part of the core International System of Units (SI).

Step 3: Examine option (B) "PSI". Pounds per Square Inch is an imperial unit of pressure used primarily within English engineering frameworks.

Step 4: Examine option (C) "Pascal". The Pascal (symbol: Pa) is the officially designated SI derived unit of pressure, internal pressure, stress, and Young's modulus. It is defined as one newton per square meter (N/m^2).

Step 5: Examine option (D) "Atmosphere". Atmosphere (atm) is a reference unit based on mean sea-level pressure, not an SI unit.

Step 6: Therefore, the Pascal is the correct SI unit for pressure measurements.

Final Answer:

Answer: (C)

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Q27.

Solution**Concept:**

This question focuses on basic chemistry principles regarding the properties of oxygen gas and its role in combustion processes within aviation safety and engineering systems.

Solution:

Step 1: Analyze statement 1: "Oxygen gas itself is highly flammable and burns with a blue flame." This is a common misconception. Pure oxygen gas does not burn and is not flammable on its own. It requires a fuel source to catch fire. Therefore, statement 1 is scientifically false.

Step 2: Analyze statement 2: "Oxygen acts as an oxidizing agent that supports and accelerates combustion." This statement is true. Oxygen is a strong oxidizing agent that sustains combustion reactions. In a high-oxygen environment, materials catch fire more easily and burn much more intensely.

Step 3: Combine these findings to evaluate the multiple-choice options. Since statement 1 is false and statement 2 is true, only statement 2 is correct.

Step 4: This analysis matches option (B).

Final Answer:

Answer: (B)

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Q28.

Solution**Concept:**

This question tests civil aviation terminology, specifically identifying the full name represented by the common acronym "DGCA" within the Indian regulatory system.

Solution:

Step 1: Recall the administrative framework governing national civil flights in India under the Ministry of Civil Aviation.

Step 2: Identify the specific agency responsible for oversight, licensing, and enforcement of flight safety regulations. This body is the Directorate General of Civil Aviation.

Step 3: Check option (A), (C), and (D). These choices swap in incorrect words like "Department", "Division", "Ground Control", or "Cargo".

Step 4: Evaluate option (B) "Directorate General of Civil Aviation". This matches the official name represented by the acronym DGCA.

Step 5: Therefore, option (B) is the correct answer.

Final Answer:

Answer: (B)

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Q29.**Solution****Concept:**

This question covers the mechanics of flight deck instrumentation, specifically identifying which instrument uses an internal barometric capsule to measure ambient static pressure changes to determine flight altitude.

Solution:

Step 1: Analyze the mechanical operation described in the question prompt. The instrument uses a barometric capsule (also known as an aneroid bellows or capsule) that expands or contracts in response to changes in ambient atmospheric pressure.

Step 2: Relate these physical pressure changes to altitude calculations. As an aircraft climbs, ambient atmospheric pressure drops, causing the sealed barometric capsule to expand. Internal gears translate this movement to display the aircraft's altitude above a specific reference level (such as mean sea level).

Step 3: Identify the instrument that performs this function. The altimeter is designed specifically to convert atmospheric pressure measurements into altitude readouts.

Step 4: Evaluate the other options. The Attitude Indicator and Gyro Horizon utilize spinning gyroscopes to display pitch and roll information relative to the horizon. The Heading Indicator also relies on gyroscopic principles to display direction, not altitude.

Step 5: Therefore, the altimeter is the instrument described in the prompt.

Final Answer:

Answer: (B)

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Q30.**Solution****Concept:**

This current affairs question tests knowledge of modern infrastructure upgrades at major commercial airports in India aimed at improving efficiency and reducing carbon footprints.

Solution:

Step 1: Identify the specific infrastructure project mentioned: a "state-of-the-art dual elevated taxiway system" designed to streamline runway traffic and lower carbon emissions.

Step 2: Review recent major infrastructure developments at primary Indian airports. Indira Gandhi International (IGI) Airport in Delhi constructed and operationalized an elevated dual taxiway system (Eastern Cross Taxiways or ECT).

Step 3: Understand the operational benefits of this system. This infrastructure allows aircraft to taxi over active access roads, reducing taxi times between runways and terminal gates. This optimization saves fuel and significantly reduces carbon dioxide emissions during ground operations.

Step 4: Match this operational fact against the options. Option (A) corresponds to Indira Gandhi International Airport, Delhi.

Final Answer: Indira Gandhi International Airport, Delhi

Answer: (A)

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Answer Key

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

