

CMAT 2018 Slot 1 Question Paper with Solutions - January 20

Forenoon Session

General Awareness

Q76. _____ varies directly with vibrating body's amplitude.

- (1) Loudness of sound
- (2) Modulation of sound
- (3) Quality of sound
- (4) Tone of the sound

Correct Answer: (1) Loudness of sound

Solution:

Step 1: Recall the basic properties of sound.

Sound depends mainly on **amplitude, frequency and waveform**.

Amplitude represents the maximum displacement of vibrating particles.

Step 2: Link amplitude with loudness.

Greater amplitude means the sound waves carry more energy.

More energy in the wave results in a **louder sound**.

Step 3: Reject other options.

- (2) Modulation is the variation of carrier signals, not related here.
- (3) Quality depends on waveform/overtones.
- (4) Tone depends mainly on frequency.

Step 4: Conclusion.

Thus, loudness varies directly with amplitude.

Quick Tip

Amplitude $\uparrow \Rightarrow$ Loudness \uparrow and Frequency $\uparrow \Rightarrow$ Pitch \uparrow .

Q77. Which of the following is true?

- (1) Saltwater freezes at the same temperature as fresh water
- (2) Saltwater freezes at slightly higher temperature than fresh water
- (3) Saltwater freezes at a slightly lower temperature than fresh water
- (4) Seawater does not freeze

Correct Answer: (3) Saltwater freezes at a slightly lower temperature than fresh water

Solution:

Step 1: Understand freezing point depression.

When salt is dissolved in water, it lowers the freezing point.

This is called **freezing point depression**.

Step 2: Apply to seawater and freshwater.

Freshwater freezes at 0°C .

Saltwater contains dissolved salts, so it freezes below 0°C (around -2°C).

Step 3: Conclusion.

Thus, saltwater freezes at a slightly lower temperature than freshwater.

Quick Tip

Adding impurities like salt lowers the freezing point of water. This is why salt is spread on icy roads.

Q78. Human eye is most sensitive to which color in the day light?

- (1) Yellow
- (2) Green
- (3) Yellowish Green
- (4) Red

Correct Answer: (3) Yellowish Green

Solution:

Step 1: Recall the photopic vision range.

In daylight, human vision is dominated by **cone cells**.

Cone cells are most responsive around wavelength ≈ 555 nm.

Step 2: Identify the color near 555 nm.

The wavelength around 555 nm corresponds to **yellowish-green** light.

Step 3: Conclusion.

Hence, the human eye is most sensitive to **yellowish-green** in daylight.

Quick Tip

Daylight vision peak sensitivity = about 555 nm, which corresponds to yellowish-green.

Q79. What is the Data Capacity of a standard size CD ROM?

- (1) 650 - 700 MB
- (2) 185 - 210 MB
- (3) 550 - 600 MB
- (4) 500 - 650 MB

Correct Answer: (1) 650 - 700 MB

Solution:

Step 1: Recall standard CD-ROM capacity.

A typical standard CD-ROM stores about **650 MB to 700 MB**.

This depends on whether it is a 74-minute or 80-minute CD.

Step 2: Match with the options.

Option (1) exactly matches the standard capacity range.

Step 3: Conclusion.

Thus, the data capacity of a standard CD-ROM is **650–700 MB**.

Quick Tip

Standard storage: CD \approx 700 MB, DVD \approx 4.7 GB, Blu-ray \approx 25 GB.

Q80. Indian Railways generates highest revenue from which of the following?

- (1) Passenger fare
- (2) Freight fare
- (3) Parcel
- (4) Sundry earnings

Correct Answer: (2) Freight fare

Solution:

Step 1: Recall the major income sources of Indian Railways.

Indian Railways earns revenue mainly from:

- Passenger services
- Freight services
- Parcel and other sources

Step 2: Identify the largest contributor.

Historically, **freight transport** (coal, goods, raw material etc.) contributes the largest share of railway revenue.

Step 3: Conclusion.

Therefore, Indian Railways generates the highest revenue from **Freight fare**.

Quick Tip

Passenger trains are highly used, but freight contributes more revenue due to large-scale goods transport.

Q81. A hash function guarantees integrity of a message. It guarantees that message has not been:-

- (1) Exchanged
- (2) Over view
- (3) Changed
- (4) Violated

Correct Answer: (3) Changed

Solution:

Step 1: Understand the role of a hash function.

A hash function converts data into a fixed-length hash value.

Even a small change in the message produces a completely different hash.

Step 2: Link hashing with integrity.

If the hash value changes, it indicates the message was **modified**.

So hashing ensures that the message has not been altered during transmission.

Step 3: Conclusion.

Thus, a hash function guarantees that the message has not been **changed**.

Quick Tip

Hashing checks integrity: Same message \Rightarrow Same hash, Changed message \Rightarrow Different hash.

Q82. Sections 299 to 377 of Indian Penal Code are:-

- (1) Of Offences Against Property
- (2) Of Offences affecting the Human Body
- (3) Of Offences Relating to Marriage
- (4) Of Defamation

Correct Answer: (2) Of Offences affecting the Human Body

Solution:

Step 1: Recall IPC chapter classification.

Indian Penal Code is divided into chapters based on types of offences.

Sections 299 onwards begin with **Culpable Homicide**, which belongs to offences against the human body.

Step 2: Verify the section range.

Sections 299–377 include:

- Homicide
- Hurt
- Wrongful restraint
- Assault
- Sexual offences

All of these relate to the human body.

Step 3: Conclusion.

Hence, Sections 299 to 377 are offences affecting the **Human Body**.

Quick Tip

IPC 299 begins with Culpable Homicide, so the entire range is related to offences against the human body.

Q83. Which of the following is true about Stand Up India Loan Scheme?

- (1) To facilitate bank loans between 10 lakh and 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower per bank branch for setting up a greenfield enterprise
- (2) To facilitate bank loans between 10 lakh and 1 Crore to at least one woman borrower per bank branch for setting up a greenfield enterprise
- (3) This enterprise may be in manufacturing, services or the trading sector
- (4) All of these

Correct Answer: (4) All of these

Solution:

Step 1: Understand the scheme's objective.

Stand Up India promotes entrepreneurship among:

- SC/ST borrowers
- Women entrepreneurs

by providing bank loans for greenfield enterprises.

Step 2: Loan range and eligibility.

The loan amount is **Rs. 10 lakh to Rs. 1 crore**.

Each bank branch supports at least one SC/ST and one woman entrepreneur.

Step 3: Business sectors covered.

The scheme supports enterprises in **manufacturing, services, and trading sectors**.

Step 4: Conclusion.

Since statements (1), (2), and (3) are all correct, the answer is **All of these**.

Quick Tip

Stand Up India = 10 lakh to 1 crore loans for SC/ST and women entrepreneurs for greenfield projects across major sectors.

Q84. Google has introduced a unique feature that guides users through 'shortcuts' that are more easily accessible by:-

- (1) Heavy vehicles
- (2) Two wheelers
- (3) Cars
- (4) Taxies

Correct Answer: (2) Two wheelers

Solution:

Step 1: Understand what the question refers to.

Google Maps introduced a feature that suggests routes or shortcuts suitable for smaller vehicles.

Such shortcuts may not be accessible for large cars or heavy vehicles.

Step 2: Identify which vehicle type benefits most.

Two wheelers can take narrow lanes and shortcuts more easily.

Therefore, this feature is mainly designed for **two wheelers**.

Step 3: Conclusion.

Hence, the correct answer is **Two wheelers**.

Quick Tip

Navigation shortcuts often target two-wheelers because they can pass through narrow roads where cars cannot.

Q85. Who of the following has launched an e-commerce startup for farm equipment rental?

- (1) Mahindra and Mahindra
- (2) Escorts Agri Machinery
- (3) Standard Tractors
- (4) John Deere

Correct Answer: (1) Mahindra and Mahindra

Solution:

Step 1: Read the question carefully.

The question asks which company launched an **e-commerce startup for farm equipment rental**.

Step 2: Identify the correct company.

Among the given options, **Mahindra and Mahindra** is known for launching innovative agri-focused digital platforms including rental and marketplace services.

Step 3: Conclusion.

Therefore, the correct answer is **Mahindra and Mahindra**.

Quick Tip

Mahindra & Mahindra is a major agri-vehicle brand and frequently launches technology-driven services in the farm sector.

Q86. India has met goal of elimination of which of the following disease (as specified by World Health Organization (WHO) under its GET2020)?

- (1) Trachoma
- (2) Tuberculosis
- (3) Ebola
- (4) Keratoconus

Correct Answer: (1) Trachoma

Solution:

Step 1: Identify what GET2020 refers to.

GET2020 stands for **Global Elimination of Trachoma by 2020**, launched by WHO.

Its aim is to eliminate trachoma as a public health problem worldwide.

Step 2: Apply the question context.

India was declared to have eliminated **trachoma** as a public health problem under WHO guidelines.

Step 3: Eliminate incorrect options.

Tuberculosis elimination is still in progress.

Ebola is not a disease targeted under GET2020 for India.

Keratoconus is an eye disorder but not part of GET2020 elimination goals.

Step 4: Conclusion.

Hence, the disease eliminated by India under GET2020 is **Trachoma**.

Quick Tip

GET2020 is a WHO initiative specifically aimed at eliminating **Trachoma** globally as a public health problem.

Q87. The three languages included in the Eighth Schedule of the Constitution by the 71st amendment are:-

- (1) Konkani, English, Manipuri
- (2) Konkani, Nepali, Dogri
- (3) Konkani, Nepali, Maithili
- (4) Konkani, Manipuri, Nepali

Correct Answer: (4) Konkani, Manipuri, Nepali

Solution:

Step 1: Recall the 71st Constitutional Amendment.

The **71st Amendment Act, 1992** added three new languages to the Eighth Schedule.

Step 2: Identify the three languages.

The languages added were:

Konkani, Manipuri and Nepali.

Step 3: Reject other options.

English was never added by this amendment.

Dogri and Maithili were added later by the 92nd Amendment.

Step 4: Conclusion.

Hence, the correct set is **Konkani, Manipuri, Nepali.**

Quick Tip

71st Amendment (1992) added: **Konkani, Manipuri, Nepali**. Dogri and Maithili came later (92nd Amendment).

Q88. Which of the following gas/es is/are used to disinfect water in sewage treatment facilities?

- (1) Ozone
- (2) Chlorine

- (3) Nitrogen
- (4) Ozone and chlorine

Correct Answer: (4) Ozone and chlorine

Solution:

Step 1: Understand disinfection in sewage treatment.

Disinfection is done to kill harmful microorganisms after water treatment.

Step 2: Identify common disinfectants.

Chlorine is widely used in municipal water treatment.

Ozone is also used as a strong oxidizing disinfectant.

Step 3: Eliminate incorrect option.

Nitrogen has no disinfecting property and is not used for killing microbes.

Step 4: Conclusion.

Thus, the gases used are **Ozone and Chlorine**.

Quick Tip

Chlorine and Ozone are common disinfectants in water treatment because they destroy bacteria and viruses effectively.

Q89. Which of the following is an election that is called earlier than expected?

- (1) Snap election
- (2) By-election
- (3) General election
- (4) Recall election

Correct Answer: (1) Snap election

Solution:

Step 1: Understand the meaning of snap election.

A snap election is held **earlier than the scheduled election date**.

It is generally called suddenly by the government or leader.

Step 2: Differentiate from other elections.

By-election is held to fill a vacancy.

General election is held at the fixed scheduled term.

Recall election is held to remove an elected representative.

Step 3: Conclusion.

Hence, an election called earlier than expected is a **Snap election**.

Quick Tip

Snap election = election held earlier than scheduled, often called suddenly due to political advantage or instability.

Q90. After discovery of which of the following methods the date of the Harappan Civilization (2300-1750 BC) has been fixed?

- (1) Dendrochronology
- (2) Stratification
- (3) Carbon isotopes
- (4) Radio carbon dating

Correct Answer: (4) Radio carbon dating

Solution:

Step 1: Recall the method used for dating ancient civilizations.

The most widely accepted scientific method for dating ancient organic remains is

Radiocarbon dating (Carbon-14 dating).

Step 2: Apply to Harappan Civilization.

The dates (2300–1750 BC) for Harappan Civilization were confirmed after the development of **Radiocarbon dating**.

Step 3: Compare with other methods.

Dendrochronology applies mainly to tree rings.

Stratification gives relative age, not exact dates.

Carbon isotope study is related but radiocarbon dating is the direct dating technique.

Step 4: Conclusion.

Hence, the method is **Radio carbon dating**.

Quick Tip

Harappan Civilization dates were fixed accurately using **Carbon-14 Radiocarbon Dating**.

Q91. Which of the following about plants is correct?

- (1) Respiration and photosynthesis proceed at the same rate
- (2) Photosynthesis proceeds at a much faster rate than respiration
- (3) Photosynthesis proceeds at a much slower rate than respiration
- (4) There is no connection between the respiration and photosynthesis

Correct Answer: (2) Photosynthesis proceeds at a much faster rate than respiration

Solution:

Step 1: Recall the two processes.

Photosynthesis: Plants produce glucose using sunlight, CO_2 , and water.

Respiration: Plants break down glucose to release energy.

Step 2: Compare rates in daylight.

During daylight, photosynthesis is highly active due to sunlight.

Respiration happens all the time but is comparatively slower.

Step 3: Identify the correct statement.

Thus, photosynthesis proceeds at a much faster rate than respiration (in light conditions).

Step 4: Conclusion.

Hence, option (2) is correct.

Quick Tip

Respiration occurs day and night, but photosynthesis occurs only in light and usually dominates during daytime.

Q92. With reference to BrahMos, which of the following statements is/are correct?

- 1. It is a ramjet supersonic cruise missile being developed by BrahMos Aerospace, a joint venture between ISRO of India and NPO Mashinostroyenia (NPOM) of Russia.**
 - 2. It can be launched from submarines, ships, aircraft or land against ships and land-based targets.**
 - 3. India and Russia have agreed to decrease the range of the BrahMos supersonic cruise missile following India's entry into the Missile Technology Control Regime (MTCR).**
- Select the correct answer using the code given below.**

- (1) 1 only
- (2) 2 and 3 only
- (3) 1 and 3 only
- (4) 1, 2 and 3

Correct Answer: (2) 2 and 3 only

Solution:

Step 1: Check statement 1.

BrahMos is a joint venture between **DRDO (India)** and **NPOM (Russia)**, not ISRO.

So, statement 1 is **incorrect**.

Step 2: Check statement 2.

BrahMos can be launched from **land, sea, air and submarines** and can target both land and sea targets.

So, statement 2 is **correct**.

Step 3: Check statement 3.

After India entered MTCR, there were range-related discussions and compliance adjustments in missile technology frameworks.

So, statement 3 is considered **correct** in the context of the question.

Step 4: Conclusion.

Hence, the correct answer is **2 and 3 only**.

Quick Tip

BrahMos = DRDO (India) + NPOM (Russia). It is a supersonic cruise missile deployable from land, sea, air and submarines.

Q93. With reference to ‘HIV and AIDS (Prevention and Control) Bill, 2017’, consider which of the following statements is/are true?

- 1. It seeks to prevent and control the spread of HIV and AIDS, prohibits discrimination against persons with HIV and AIDS.**
- 2. It makes an anti-retroviral therapy a legal right of HIV/AIDS patients.**
- 3. It has provisions to safeguard the property rights of HIV positive people.**
- 4. Every HIV infected person below the age of 18 years has the right to reside in a shared household and enjoy the facilities of the household.**

- (1) 1 and 2 only
(2) 3 only
(3) 2 and 3 only
(4) 1, 2, 3 and 4

Correct Answer: (4) 1, 2, 3 and 4

Solution:

Step 1: Understand the aim of the Bill.

The bill focuses on **prevention, control, and protection of rights** of HIV/AIDS affected persons.

Step 2: Verify statement-wise.

Statement 1: True, it prohibits discrimination.

Statement 2: True, it provides access to **anti-retroviral therapy**.

Statement 3: True, it safeguards property-related rights.

Statement 4: True, it ensures minors have the right to shared household and facilities.

Step 3: Conclusion.

All statements are correct, hence option (4) is correct.

Quick Tip

The HIV/AIDS Bill, 2017 is a rights-based law focusing on non-discrimination, health-care access and legal protection for HIV-positive individuals.

Q94. How many angular bleed lines are present on the new Indian rupee 2000 bank note?

(1) 7

(2) 4

(3) 6

(4) 5

Correct Answer: (1) 7

Solution:

Step 1: Understand what bleed lines are.

Bleed lines are raised tactile marks on currency notes to help visually impaired persons identify denominations.

Step 2: Recall the 2000 note features.

The Indian Rupee 2000 note has **7 angular bleed lines** on both left and right sides.

Step 3: Conclusion.

Hence, the number of angular bleed lines is 7.

Quick Tip

New currency notes include tactile features like **angular bleed lines** to aid visually impaired individuals.

Q95. Which of the following banned the 'manjha' used for flying kites?

- (1) Supreme Court of India
- (2) National Green Tribunal
- (3) Health Ministry
- (4) Environment Ministry

Correct Answer: (2) National Green Tribunal

Solution:

Step 1: Understand what 'manjha' refers to.

Manjha is a kite-flying string, often coated with glass or chemical substances, causing harm to birds, animals and humans.

Step 2: Recall the authority responsible for banning it.

The **National Green Tribunal (NGT)** banned harmful manjha due to environmental and public safety concerns.

Step 3: Conclusion.

Therefore, the ban was imposed by the **National Green Tribunal**.

Quick Tip

NGT intervenes when an activity harms environment or wildlife. Manjha was banned due to risks to birds and public safety.

Q96. Who said, "The greater number of fortresses you hold the weaker will be your power. Let all our forces will be on the sea, because if we should not be powerful at the sea, everything at once be against us.....Let it be known for certain that as long as you may be powerful at the sea....."?

- (1) Da Almeida
- (2) John Cabot
- (3) Christopher Columbus

(4) Amerigo Vespucci

Correct Answer: (1) Da Almeida

Solution:

Step 1: Understand the context of the statement.

The quote emphasizes that **sea power** is more important than holding many forts on land.

This reflects a policy where naval supremacy is the key to controlling trade and colonies.

Step 2: Recall who promoted sea dominance.

Francisco de Almeida, the first Portuguese Viceroy of India, strongly promoted the idea of **naval power** and maritime control.

He believed that the Portuguese should dominate the seas to maintain their influence in Asia.

Step 3: Eliminate other options.

John Cabot, Columbus and Vespucci were explorers, but this quote is related specifically to Portuguese naval strategy.

Step 4: Conclusion.

Hence, the quote is attributed to **Da Almeida**.

Quick Tip

The policy of Portuguese sea dominance in India is closely linked with **Francisco de Almeida**.

Q97. 'Vote on account' is dealt in which of the following articles of the Indian Constitution?

(1) 121

(2) 116

(3) 171

(4) 131

Correct Answer: (2) 116

Solution:

Step 1: Understand what "Vote on Account" means.

A **Vote on Account** allows the government to withdraw money from the Consolidated Fund of India for meeting expenses for a short period (usually two months), when the full budget is not yet passed.

Step 2: Recall the Constitutional Article.

Article 116 deals with **Vote on Account, Vote of Credit, and Exceptional Grants**.

Step 3: Eliminate other options.

Article 121 deals with restriction on parliamentary discussion of Supreme Court judges.

Article 171 relates to Legislative Council composition.

Article 131 relates to original jurisdiction of the Supreme Court.

Step 4: Conclusion.

Therefore, **Vote on Account** is dealt under **Article 116**.

Quick Tip

Remember: **Article 116 = Vote on Account**. It allows temporary withdrawal of funds before the full budget is passed.

Q98. The Taj Mahal is threatened due to:-

- (1) Carbon dioxide
- (2) Carbon monoxide
- (3) Sulphur dioxide
- (4) Calcium oxide

Correct Answer: (3) Sulphur dioxide

Solution:

Step 1: Identify the main threat to Taj Mahal.

The Taj Mahal is made of white marble, which is highly sensitive to air pollution.

Step 2: Understand how pollution affects marble.

Sulphur dioxide (SO₂) mixes with moisture in the air and forms **sulphuric acid**.

This acid causes **acid rain**, which reacts with marble (calcium carbonate) and leads to **yellowing and corrosion**.

Step 3: Eliminate incorrect options.

CO₂ and CO mainly affect climate and health but are not primary causes of marble corrosion.

Calcium oxide is not an air pollutant threatening the monument.

Step 4: Conclusion.

Thus, Taj Mahal is threatened mainly due to **Sulphur dioxide**.

Quick Tip

SO₂ causes **acid rain**, and acid rain is the major factor responsible for marble damage in monuments like the Taj Mahal.

Q99. The below given painting 'The Persistence of Memory' is one of the most recognizable pieces in art history. Who was the painter?



(1) Leonardo da Vinci

(2) Vincent van Gogh

(3) Edvard Munch

(4) Salvador Dali

Correct Answer: (4) Salvador Dali

Solution:

Step 1: Recognize the painting.

'The Persistence of Memory' is famous for its melting clocks and surreal landscape.

Step 2: Recall the painter.

This iconic surrealist artwork was created by **Salvador Dalí**.

Step 3: Eliminate other options.

Leonardo da Vinci was a Renaissance artist.

Vincent van Gogh is known for Post-Impressionism.

Edvard Munch is known for Expressionism.

The surrealist melting clock painting is Dalí's work.

Step 4: Conclusion.

Hence, the painter is **Salvador Dalí**.

Quick Tip

If you see melting clocks in a surreal landscape, the painter is almost always **Salvador Dalí**.

Q100. Who is the famous sports personality in the image below?



- (1) Syed Abdul Rahim
- (2) Farokh Engineer
- (3) Ashok Mankad
- (4) Dhyan Chand

Correct Answer: (4) Dhyan Chand

Solution:

Step 1: Identify the personality in the image.

The portrait shown is associated with India's legendary hockey player **Major Dhyan Chand**.

Step 2: Recall why he is famous.

Dhyan Chand is regarded as one of the greatest field hockey players in history.

He played a key role in India's Olympic hockey dominance and is known as the **“Wizard of Hockey.”**

Step 3: Eliminate other options.

Syed Abdul Rahim was a football coach.

Farokh Engineer and Ashok Mankad are cricketers.

The iconic portrait in such GK questions typically refers to **Dhyan Chand**.

Step 4: Conclusion.

Hence, the sports personality is **Dhyan Chand**.

Quick Tip

Major Dhyan Chand is known as the **Wizard of Hockey** and is one of India's greatest sports legends.
