# Agniveer Army GD 30 June 2025 (Shift 1) Memory-Based Paper (Previous Year Paper)

Army GD Agniveer • 2025 • 50 questions • 60 minutes • Answer key and solutions

**Take this paper as a timed mock test**

Practise under exam conditions, then review your answers after you submit.

**yourmocktest.com/pyq/army-gd-agniveer/agniveer-army-gd-30-june-2025-shift-1-memory-base…**

Scan the QR code or click the link to open it.

YourMockTest.com — Free Study Material

## GENERAL KNOWLEDGE

**Q1.** Which country is called "Land of the Thunder Dragon"?

**(a)** Nepal
**(b)** Bhutan
**(c)** Bangladesh
**(d)** Myanmar

**Q2.** Which ocean/sea lies to the west of India ?

**(a)** The Arabian Sea
**(b)** The Bay of Bengal
**(c)** The Indian Ocean
**(d)** None of the above

**Q3.** What was the code name of Indo- Pak kargil war?

**(a)** Operation Blue Star
**(b)** Operation Vijay
**(c)** Operation Viraat
**(d)** Operation Kargil

**Q4.** Which state of India has the highest population density?

**(a)** West Bengal
**(b)** Bihar
**(c)** Maharashtra
**(d)** Kerala

**Q5.** Who is the Chief Minister of Tamil Nadu?

**(a)** EK Palaniswami
**(b)** BT Subramaniam
**(c)** O Panneerselvam
**(d)** MK Stalin

**Q6.** Who is the current Vice President of the U.S.?

**(a)** Pam Bondi
**(b)** Kamla Harris
**(c)** Tulsi Gabbard
**(d)** J. D. Vance

**Q7.** Who said, "Political freedom is the breath of the nation"?

**(a)** Bal Gangadhar Tilak
**(b)** Bipin Chandra Pal
**(c)** Arvind Ghosh

**(d)** Rabindranath Tagore

**Q8.** Kathakali is the dance of which state of India?

**(a)** Maharashtra
**(b)** Uttarakhand
**(c)** Odisha
**(d)** Kerala

**Q9.** Downs are temperate grassland in:

**(a)** Australia
**(b)** China
**(c)** Japan
**(d)** USA

**Q10.** Dandi March was started on-

**(a)** 12 March, 1930
**(b)** 6 April, 1930
**(c)** 12 November, 1930
**(d)** 12 September, 1931

**Q11.** Who among the following eminent musicians is a famous tabla player?

**(a)** Ustad Moinuddin Khan
**(b)** Ustad Bade Gulam Ali Khan
**(c)** Ustad Abdul Rashid Khan
**(d)** Ustad Zakir Hussain

**Q12.** 'National Youth Day' is celebrated on _____.

**(a)** 12th January
**(b)** 3rd January
**(c)** 30th January
**(d)** 21st January

**Q13.** The _____ Amendment decreased the voting age from 21 to 18.

**(a)** 61^(st)
**(b)** 25^(th)
**(c)** 42^(nd)
**(d)** 44^(th)

**Q14.** What is the motto of 'Indian Air Force'?

**(a)** Sewa Paramo Dharma
**(b)** Nabha Sparsham Deeptam
**(c)** Sham-no Varuna
**(d)** Aakasey Satrun Jahi

**Q15.** Which is the driest place in the world?

**(a)** Wastack
**(b)** Erica
**(c)** McMurdo
**(d)** Ethiopia

## GENERAL SCIENCE

YourMockTest.com — Free Study Material

**Q16.** What is the SI unit of acceleration?

**(a)** ms^(-1)
**(b)** ms
**(c)** sm^(-1)
**(d)** ms^(-2)

**Q17.** An essential feature of seed germination is the presence of

**(a)** Minerals
**(b)** Water
**(c)** Light
**(d)** Temperature

**Q18.** Name the technique used to separate butter from curd.

**(a)** Centrifugation
**(b)** Sublimation
**(c)** Evaporation
**(d)** Filtration

**Q19.** The process used to separate grain from stalks is

**(a)** Hand picking
**(b)** Threshing
**(c)** Sublimation
**(d)** Sieving

**Q20.** Golden Rice contains high amount of _____

**(a)** Vitamin D
**(b)** Vitamin A
**(c)** Vitamin B
**(d)** Vitamin C

**Q21.** How many canine teeth are there in adult human?

**(a)** 2
**(b)** 8
**(c)** 6
**(d)** 4

**Q22.** Which of the following is not a component of an electric circuit?

**(a)** Switch
**(b)** Board
**(c)** Resistor
**(d)** Capacitor

**Q23.** Nitrogen constitutes _____% of our atmosphere

**(a)** 28
**(b)** 58
**(c)** 68
**(d)** 78

**Q24.** What is S.I unit of Energy?

**(a)** Joule
**(b)** Watt
**(c)** Newton
**(d)** None of these

YourMockTest.com — Free Study Material

**Q25.** When ice melts into water, its:-

**(a)** Volume increases
**(b)** Mass increases
**(c)** Volume decreases
**(d)** Mass decreases

**Q26.** The main component of compressed natural gas (CNG) is

**(a)** ethane
**(b)** methane
**(c)** butane
**(d)** None of the above

**Q27.** Formation of curd by milk is done by-

**(a)** Yeasts
**(b)** Lactobacillus
**(c)** Moulds
**(d)** Algae

**Q28.** Which among the following is the fifth state of matter?

**(a)** Liquid
**(b)** Supersolid
**(c)** Bose-Einstein Condensate (BEC)
**(d)** Plasma

**Q29.** Pasteurization is related to

**(a)** sterilization of milk
**(b)** dehydration of milk
**(c)** fermentation of milk
**(d)** distillation of milk

**Q30.** The process of respiration is

**(a)** an oxidation reaction which is exothermic
**(b)** an oxidation reaction which is endothermic
**(c)** a reduction reaction which is exothermic
**(d)** a reduction reaction which is endothermic

## MATHEMATICS

**Q31.** 65% of 1465 is:

**(a)** 940.25
**(b)** 952.25
**(c)** 925.50
**(d)** 930.25

**Q32.** If 20 men working for 10 days earn Rs. 7,1800, how much will 26 men earn in 17 days?

**(a)** Rs. 1,58,678
**(b)** Rs. 1,78,678
**(c)** Rs. 1,58,000
**(d)** Rs. 1,55,000

**Q33.** 7982 + 93 = ?

**(a)** 8025
**(b)** 8050
**(c)** 8075
**(d)** 8500

YourMockTest.com — Free Study Material

**Q34.** What is the measure of each interior angle in an equilateral triangle?

**(a)** 75°
**(b)** 80°
**(c)** 90°
**(d)** 60°

**Q35.** If x : 7 = 56 : 40, Find the value of x.

**(a)** 9.8
**(b)** 8.9
**(c)** 10
**(d)** 7.8

**Q36.** The present population of a village is 17,000. If the population increases by 25% in the next year, what will be the population at the end of the year?

**(a)** 21250
**(b)** 22250
**(c)** 23000
**(d)** 21500

**Q37.** Express 48% as a simplified fraction.

**(a)** 12/25
**(b)** 15/25
**(c)** 8/25
**(d)** 13/20

**Q38.** What is the average of 206, 205, 90, and 315?

**(a)** 205
**(b)** 201
**(c)** 204
**(d)** 198

**Q39.** Find the LCM of 21, 4, 28, 42.

**(a)** 84
**(b)** 42
**(c)** 96
**(d)** 72

**Q40.** 12 × 18 - 12 = ?

**(a)** 138
**(b)** 204
**(c)** 190
**(d)** 168

**Q41.** The present age ratio of A to B is 5:2. If B is 18 years old, what is the present age of A?

**(a)** 42
**(b)** 32
**(c)** 45
**(d)** 54

**Q42.** The area of a rectangle is 35 $cm^2$. If its length is 7 cm, what is the perimeter of the rectangle?

**(a)** 18 cm
**(b)** 12 cm
**(c)** 24 cm
**(d)** 36 cm

YourMockTest.com — Free Study Material

**Q43.** Ram had 60 chocolates. If he ate 20% of them, how many chocolates does he have left?

**(a)** 48
**(b)** 58
**(c)** 52
**(d)** 56

**Q44.** 81/3 × 27/3 = ?

**(a)** 253
**(b)** 248
**(c)** 242
**(d)** 243

**Q45.** What is $(a + b)^2$ ??

**(a)** $a^2 + 2ab + b^2$
**(b)** $a + b^2$
**(c)** $a^2 + b$
**(d)** $a^2 + b^2$

## LOGICAL REASONING

**Q46.** Pointing at a lady in a photograph, a man said ‘She is niece of my only son’. How is the man related to that lady?

**(a)** Paternal grandfather
**(b)** Brother-in-law
**(c)** Maternal grandfather
**(d)** Uncle

**Q47.** If in a special code language DEMOCRAT is written as FCOMEPCR, then what will be the code for MONARCHY in that code language?

**(a)** QMPYTAJW
**(b)** OMPYUAJW
**(c)** OMPZZTBJW
**(d)** OMPYTAJW

**Q48.** If '+' means 'x', '-' means '+', 'x' means '÷' and '÷' means '-', then choose the correct expression from the following options.

**(a)** 14 × 7 ÷ 2 – 48 + 16 = 97
**(b)** 38 ÷ 2 + 1 × 6 - 6 = 18
**(c)** 21 × 7 ÷ 7 + 3 - 21 = 3
**(d)** 9 × 3 ÷ 12 + 5 - 24 = 31

**Q49.** In a certain code language, “HOST” is coded as ‘9724’, ‘KINDO’ is coded as ‘45310’, ‘KNOWS’ is coded as ‘37654”. What can be the code for ‘W’ in that code language?

**(a)** 6
**(b)** 5
**(c)** 4
**(d)** 7

**Q50.** In a row of 45 students, Julie is 17th from the right end. What will be her rank from the left end?

**(a)** 28
**(b)** 29
**(c)** 30
**(d)** 27

YourMockTest.com — Free Study Material

## ANSWER KEY

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | b | 2 | a | 3 | b | 4 | b | 5 | d | 6 | d | 7 | c | 8 | d | 9 | a | 10 | a |
| 11 | d | 12 | a | 13 | a | 14 | b | 15 | c | 16 | d | 17 | b | 18 | a | 19 | b | 20 | b |
| 21 | d | 22 | b | 23 | d | 24 | a | 25 | c | 26 | b | 27 | b | 28 | c | 29 | a | 30 | a |
| 31 | b | 32 | a | 33 | c | 34 | d | 35 | a | 36 | a | 37 | a | 38 | c | 39 | a | 40 | b |
| 41 | c | 42 | c | 43 | a | 44 | d | 45 | a | 46 | c | 47 | d | 48 | c | 49 | a | 50 | b |

## SOLUTIONS

**Q1. Answer: (b) Bhutan**

The correct answer is Bhutan.

Key Points

• Druk Yul is the traditional name for Bhutan, meaning 'Land of the Thunder Dragon'.

• They believe that thunder is actually the voices of the dragon roaring.

• In Dzongkha, the official language of Bhutan, Bhutan is known as Druk Yul or the “Land of Dragon”, and Bhutanese leaders are known as Druk Gyalpo, meaning “Thunder Dragon Kings”.

• The reason for the name is also because of the violent and large thunderstorms that whip down through the valleys from the Himalayas.

Important Points

• Bhutan:

• Bhutan is a landlocked country in the Eastern Himalayas.

• It is bordered by China to the north and India to the south. Nepal and Bangladesh are located in proximity to Bhutan but do not share a land border.

• Bhutan is a constitutional monarchy with Mahayana Buddhism as the state religion.

• Bhutan and neighbouring Tibet experienced the spread of Buddhism which originated in the Indian subcontinent during the lifetime of Gautama Buddha.

• Capital: Thimphu.

• Currency: Bhutanese ngultrum.

• Prime minister: Tshering Tobgay (From 28th Jan 2024)

• Literacy Rate: 66.56%.

Additional Information

| Country | Sobriquet |
|---|---|
| Japan | Land of Rising Sun |
| Myanmar | Land of Golden Pagoda |

**Q2. Answer: (a) The Arabian Sea**

The correct answer is the Arabian Sea.

Key Points

• The Arabian Sea lies to the west of India.

• It is a region of the northern Indian Ocean.

• It is bounded by Pakistan and Iran, on the west by the Gulf of Aden, Guardafui Channel, and the Arabian Peninsula, on the southeast by the Laccadive Sea, on the southeast by Somali Sea, and on the east by India.

Additional Information

• The Bay of Bengal is in the northeastern part of the Indian Ocean.

• The Bay of Bengal is bounded on the west and northwest by India, on the north by Bangladesh, and on the east by Myanmar and the Andaman and Nicobar islands of India.

• The Indian Ocean is the youngest among the Pacific and the Atlantic oceans.

• Java Trench is a part of the Indian Ocean.

• It stretches between the southern tips of Africa and Australia.

YourMockTest.com — Free Study Material

**Q3. Answer: (b) Operation Vijay**

The Correct Answer is Option 2 i.e Operation Vijay.

Key Points

• Operation Vijay:

• Kargil War was declared over on July 26, 1999, after Indian soldiers pushed back the Pakistani troops from the neighboring country's Northern Light Infantry, from the captured peaks.

• Since then 26th July is observed as 'Kargil Vijay Diwas' to commemorate India's victory.

• The war took place between May and July of 1999 in Jammu and Kashmir's Kargil district.

• Operation Vijay was the code name of the Indian operation to clear the Kargil sector.

• Operation Blue Star:

• It was a military operation to remove Sikh militants who were amassing weapons in the Harmandir Sahib Complex (Golden Temple) in Amritsar, in order to establish control over it.

• The operation was launched in response to a deterioration of law and order in Punjab.

• Operation Viraat:

• It was an anti-insurgency operation launched against the LTTE (Liberation Tigers of Tamil Eelam) in April 1988 by the IPKF (Indian Peace Keeping Force) in Northern Sri Lanka.

Additional Information

Their is another Operation Vijay which is related to Goa and Diu issue.

• It was the code name for the Indian military operation to liberate Goa, Daman and Diu from Portuguese rule in 1961.

• The operation was a success, and the Indian forces were able to liberate the territories within 36 hours.

**Q4. Answer: (b) Bihar**

Bihar is the correct answer.

Key Points

• Bihar is the state with the highest population density. Bihar has the highest population density, with 1,102 people per square kilometer.

• Bihar's population has increased by 25.42% in the last decade (2001-2011) when compared to the previous decade (1991-2001).

• The state's population is estimated to be 10.41 million people.

• According to the 2011 Census in India, Uttar Pradesh, Maharashtra, and Bihar are the most populous states, while Sikkim is the least populous.

Additional Information

• Maharashtra, situated in India's western and central peninsular area, is the country's second largest population state. It is also the world's third most populous country subdivision.

• On May 1, 1960, the state was founded by separating the bilingual state of Bombay. The state of Maharashtra is divided into six divisions and 36 districts. Mumbai, the state capital, is also India's most populous urban agglomeration.

• Maharashtra covers a large chunk of the Deccan plateau, which is distinguished by low hills, expansive plateaus, and river basins.

• West Bengal, situated in eastern India, is the nation's fourth most populated state. Despite its small size, it boasts a significant population, making it one of India's most densely populated states. Kolkata, the state capital, is noted for its cultural, literary, and intellectual energy.

• West Bengal was the first state in which the roots of nationalism were nurtured during British rule, and it played a vital part in India's freedom war. The state is well-known for its illustrious cultural legacy, literature, music, and arts.

• West Bengal is also known for its diversified geography, which stretches from the Himalayas to the Bay of Bengal in the south. The population density in the state is 1,029 people per square kilometer.

**Q5. Answer: (d) MK Stalin**

The correct answer is M K Stalin.

Key Points

• Muthuvel Karunanidhi Stalin is an Indian politician who took oath as the 21st Chief Minister of Tamil Nadu, the 8th person to hold the position.

• Stalin along with the rest of his cabinet took oath as the Chief Minister on 7 May 2021.

• They won 159 seats out of 234, with the Dravida Munnetra Kazhagam (DMK) itself winning an absolute majority with 132 seats.

• In the 2021 Assembly elections, Stalin led the campaign for the Secular Progressive Alliance.

• Kanjeevaram Natarajan Annadurai served as the fourth and last Chief Minister of Madras State from 1967 to 1969 and was the

YourMockTest.com – Free Study Material

first Chief Minister of Tamil Nadu (Madras State renamed as Tamil Nadu) for 20 days before his death.

• Janaki Ramachandran was the first woman Chief Minister of Tamil Nadu. She was commonly known as VN Janaki who was a famous actress.

**Q6. Answer: (d) J. D. Vance**

The correct answer is J. D. Vance

Key Points

• JD Vance is the current Vice President of the United States, visiting India on a 4-day tour.

• The Vance family received a traditional welcome with dancers and decorated elephants at Amber Fort.

• The fort was once the capital of Kachhwaha Rajputs and built in four stages beginning with Raja Man Singh I.

• CM Sharma called the visit an "honour" and praised US-India cultural ties on social media.

**Q7. Answer: (c) Arvind Ghosh**

The correct answer is 'Arvind Ghosh'

Key Points

• Arvind Ghosh:

• Arvind Ghosh, also known as Sri Aurobindo, was an Indian philosopher, yogi, guru, poet, and nationalist.

• He played a significant role in the early stages of the Indian independence movement.

• He is known for his writings on political freedom and spiritual evolution.

• The quote "Political freedom is the breath of the nation" reflects his belief in the essential nature of political independence for the nation's vitality.

Additional Information

• Bal Gangadhar Tilak:

• Bal Gangadhar Tilak was a prominent leader in the Indian independence movement.

• He is famously known for the quote "Swaraj is my birthright, and I shall have it."

• While he emphasized political freedom, the specific quote in question is not attributed to him.

• Bipin Chandra Pal:

• Bipin Chandra Pal was another key figure in the Indian independence movement and part of the Lal Bal Pal trio.

• He advocated for radical measures for achieving independence but did not make the specific statement in question.

• Rabindranath Tagore:

• Rabindranath Tagore was a renowned poet, writer, and philosopher who contributed significantly to Indian literature and thought.

• He was a strong advocate for freedom and human rights but did not make the specific statement attributed to Arvind Ghosh.

**Q8. Answer: (d) Kerala**

The correct answer is Kerala.

Key Points

• Kathakali is a classical dance form that originates from Kerala, a state in the southern part of India.

• It is distinguished by its vibrant costumes, elaborate makeup, and face masks that the performers wear.

• Kathakali translates to "Story-Play" and is known for its intricate storytelling, detailed gestures, and expressive eye movements.

• The dance form combines dance, music, drama, and literature into a composite art form, making it unique and complex.

• Themes of Kathakali are mostly taken from the Indian epics like Mahabharata, Ramayana, and other ancient scriptures.

• It is performed exclusively by men and involves rigorous physical training to master the art form.

• The music used in Kathakali is called Sopanam and is sung in the Malayalam language.

Additional Information

• Tamil Nadu

• Tamil Nadu is known for its own classical dance form, Bharatanatyam, which is one of the oldest classical dance traditions in India.

• Karnataka

• Karnataka is famous for the classical dance form called Yakshagana, which combines dance, music, dialogue, costume, makeup, and stage techniques with a unique style and form.

• Andhra Pradesh

• Andhra Pradesh is renowned for the classical dance form Kuchipudi, which, like Kathakali, combines dance with expressive eye movements and intricate footwork.

YourMockTest.com — Free Study Material

**Q9. Answer: (a) Australia**

Explanation:

• Grasslands are areas where the vegetation is dominated by grasses.

There are two types of Grasslands.

• One is tropical grasslands, which generally lie between the belts of tropical forest and desert.

• The other is temperate grasslands, which generally lie between deserts and temperate forests.

Tropical Grasslands are:

• East Africa- Savanna

• Brazil- Campos.

• Venezuela- Llanos

Temperate Grasslands are:

• Argentina- Pampas

• America- Prairie

• Africa- Veld

• Asia- Steppe

• Australia- Down

• Europe - Steppe

Key Points

| Grassland | Description |
|---|---|
| Down | • It is a pastoral and agricultural region in southeastern Queensland, Australia. - It extends westward from the Great Dividing Range and southward to the Dumaresq and Macintyre rivers, generally occupying the basin of the Condamine River. - The Downs is a tableland that covers an area of about 5,500 square miles (14,200 square km) and has an elevation of 1,500–2,000 feet (450–600 m). |
| Pampa | • Pampas grasslands are located in the South American continent. - Pampas is a temperate grassland found in Argentina, Uruguay, and Brazil. - They have a temperate climate with precipitation of about 600 to 1,200 m.m |
| Prairie | • Prairies are enormous stretches of flat grassland with moderate temperatures, moderate rainfall, and few trees. - It is cultivable throughout the year due to a local wind called Chinook which blows from Rocky mountain and raises the temperature in the prairies melting the snow. - The North American prairie is ideal for agriculture. - The weather is moderate, and there are no trees to move to create large, open fields. - The prairies grasses hold the soil firmly in place, so soil erosion is minimal. - Prairie's grassroots are very good at reaching water very far down under the surface, and they can live for a very long time. - Grains are a type of grass, so the prairie grassland is perfect for growing grain like wheat, rye, and oats. |
| Campos | • Savanna grasslands in Brazil are called Campos. - These grasslands lie between 24°S and 35°S, which includes Uruguay and parts of Paraguay, Brazil, and Argentina. - These are rich in plant species and are more diverse than forest ecosystems. - The climate here is subtropical humid and the rainfall is distributed regularly all over the year. - A grassland is these areas mostly comprises grasses. |
| Steppe | • It is a belt of grassland that extends some 5,000 miles (8,000 km) from Hungary in the west through Ukraine, Russia and Central Asia to Manchuria in the east. - Mountain ranges interrupt the steppe, dividing it into distinct segments. - Steppes are semi-arid, meaning they receive 25 to 50 centimetres (10-20 inches) of rain each year. |

Additional Information

YourMockTest.com — Free Study Material

| Grassland | Regions |
|---|---|
| Downs | Australia |
| Pampas | South America (Argentina & Uruguay) |
| Prairies | North America |
| Savanna | Africa and Australia |
| Selvas | South America |
| Steppes | Europe and Northern Asia |

**Q10. Answer: (a) 12 March, 1930**

Dandi March was started on 12 March, 1930.

Key Points

• In 1930, Gandhiji declared that he would lead a march to break the salt law.

• According to this law, the state had a monopoly on the manufacture and sale of salt.

• Mahatma Gandhi along with other nationalists reasoned that it was sinful to tax salt since it is such an essential item of our food.

• The Salt March related the general desire of freedom to a specific grievance shared by everybody, and thus did not divide the rich nd the poor.

• On 12 March, 1930 Gandhiji and his followers started Dandi March from Sabarmati Ashram.

• Thousands of satyagrahis and leaders like Sarojini Naidu joined him.

• They marched for over 240 miles from Sabarmati to the coastal town of Dandi where they broke the government law by gathering natural salt found on the seashore, and boiling sea water to produce salt.

• Mahatma Gandhi broke the salt law by picking up a lump of natural salt, at Dandi on 6^(th) April 1930.

Hence, we can conclude that the Dandi March was started on 12 March, 1930.

**Q11. Answer: (d) Ustad Zakir Hussain**

The correct answer is Ustad Zakir Hussain

Key Points

• Ustad Zakir Hussain is a renowned tabla player known globally for his virtuosity and contributions to Indian classical music.

• He has collaborated with various artists across different genres, enhancing the popularity of tabla worldwide.

• Ustad Zakir Hussain has received numerous awards, including the Padma Shri and Padma Bhushan, for his outstanding contributions to music.

• He is the son of legendary tabla player Ustad Alla Rakha, and has carried forward his father's legacy with great distinction.

Additional Information

• Ustad Moinuddin Khan is known for his expertise in playing the sarangi.

• Ustad Bade Gulam Ali Khan was a legendary vocalist in Hindustani classical music.

• Ustad Abdul Rashid Khan was an eminent vocalist and composer in the Hindustani classical tradition.

• Ustad Zakir Hussain has also contributed to the fusion genre, collaborating with artists like John McLaughlin and Mickey Hart.

• He is actively involved in teaching and promoting Indian classical music through various institutions and workshops.

**Q12. Answer: (a) 12th January**

The correct answer is 12th January.

Key Points

• National Youth Day

• National Youth Day also known as Vivekananda Jayanti, is celebrated on 12 January.

• It is celebrated on the occasion of the birthday of Swami Vivekananda.

• In 1984 the Government of India declared this day as National Youth Day and since 1985 the event is celebrated in India every year.

• It is observed all over India at schools and colleges with processions, speeches, music, by youth on 12th January every year.

Additional Information

| Days | Events |
|---|---|
| 30 January | Martyrs Day or Shaheed Day |

YourMockTest.com — Free Study Material

| | |
|---|---|
| 21 January | International Sweatpants Day |

**Q13. Answer: (a) 61^(st)**

The correct answer is 61st.

Key Points

• The 61st Amendment of the Indian Constitution decreased the voting age for the State Legislative Assemblies and the Lok Sabha elections from 21 to 18 years.

• This involved amendment of Article 326 of the Indian Constitution.

• The bill was approved on 28 March 1989.

Confusion Points

• The bill was passed by the Lok Sabha on 15th December 1988.

• The bill was passed by the Rajya Sabha on 20th December 1988.

• The bill was assented by President Venkaraman on 28th March 1989.

• The bill came into force on 28th March 1989.

• The Prime Minister who reduced the voting age from 21 to 18 years - Rajiv Gandhi.

• The first general elections to the Lok Sabha were held in India - Between 25th October 1951 and 21st February 1952.

Additional Information

• 42nd Amendment:

• Added Socialist, Secular& integrity in Preamble.

• Added Fundamental duties(Part IV A).

• Creation of All India Judicial Service.

• Extended the time limit of President rule from 6 months to 1 year.

• Added 3 new directive principles.

• Raised tenure of Lok Sabha &State legislature assemblies from 5 to 6 years;

• Proclamation of national emergency.

• Made obligatory for President to act on the advice of the Council of ministers.

• 44thAmendment:

• Amendment to negate judicial pronouncements on scope and applicability on Sales Tax.

• Amend articles 269, 286, and 366. Amend the seventh schedule.

**Q14. Answer: (b) Nabha Sparsham Deeptam**

The Correct Answer is Option (2) i.e. Nabha Sparsham Deeptam.

Key Points

• The motto of the Indian Air Force is "Nabha Sparsham Deeptam" or "Touch the Sky with Glory".

• It was founded on 8^(th) October 1932. Its headquarters are in New Delhi.

• The present Chief of Air Staff of India is Vivek Ram Chaudhari as of Nov 2022.

| Force | Motto | Translation | Founded In |
|---|---|---|---|
| Indian Army | Sewa Paramo Dharam | Service is our duty | 1^(st) April 1895 |
| Indian Navy | Sham-no Varuna | May the Lord of the Oceans, be auspicious unto us | 5^(th) September 1612 |
| Corps of Army Air Defence | Aakasey Saturn Jahi | Win over the enemy in the sky. | 1939 |

**Q15. Answer: (c) McMurdo**

The correct answer is McMurdo.

Key Points

• McMurdo Dry Valleys is considered to be the driest place in the world.

• These are a row of largely snow-free valleys in Antarctica.

• The region is one of the world's most extreme deserts.

• It has not seen rain for nearly 2 million years.

• The Atacama Desert is considered the second driest place in the world.

• It is located in Arica, Chile.

YourMockTest.com – Free Study Material

• The annual rainfall is only 0.03 inches.
• The desert plateau is 990 miles long and is the only true desert to receive less rain than the polar deserts.
• In Ethiopia, annual rainfall ranges from 1,000 to 2,200 millimeters (40 to 87 inches).
• It is considered largely arid but exhibits a high variability of precipitation.
• There are no such places as Wastack, Erica, and Dellal.

**Q16. Answer: (d) ms^(-2)**

The correct answer is ms-2.

Key Points

• SI unit of acceleration is ms-2.
• Acceleration is defined as the rate of change of velocity with respect to time.
• A body's acceleration is the final result of all the forces being applied to the body, as defined by Newton's second law.
• Acceleration is a vector quantity that is described as the frequency at which a body's velocity changes. It is also the second derivative of position with respect to time or it is the first derivative of velocity with respect to time.

Key Points

• SI unit and Formula:
• The S.I unit for acceleration is meter per second square or m/s2.
• Mathematically acceleration is denoted as a= Change in velocity / Time taken.

Additional Information

• The types of acceleration are:
• Uniform acceleration: When an object is traveling in a straight line with an increase in velocity at equal intervals of time, then the object is said to be in uniform acceleration. The free-falling of an object is an example of uniform acceleration.
• Non-uniform acceleration: When an object is traveling with an increase in velocity but not at equal intervals of time is known as non-uniform acceleration. Bus moving or leaving from the bus stop is an example of non-uniform acceleration.
• Instantaneous acceleration: The acceleration of an object at any instant of time is known as instantaneous acceleration.

**Q17. Answer: (b) Water**

The correct answer is Water.

• An essential feature of seed germination is in the presence of Water.

Key Points

• The process of seed germination depends on many factors like
• Temperature
• Water
• Oxygen
• Sometimes light.
• Seeds usually germinate within a wide temperature range.
• Hence, the essential requirement for seed germination to take place is water and oxygen.
• Germination cannot take place without a sufficient supply of water.
• In presence of sufficient moisture, water is taken up by seed.
• Oxygen is essential for aerobic respiration.

Important Points

• Water, air, and suitable temperature are necessary for seed germination.
• Water is necessary for germination because food is stored in the seeds in dry conditions, but the developing embryo cannot utilize this dry food.
• Food can be utilized in liquid form only and seeds can utilize only dissolved oxygen.
• Excess water stops germination because once all the dissolved oxygen is utilized by the seed, further germination is not possible as the life-supporting oxygen is now lacking.
• So, the correct answer is 'Water'.

**Q18. Answer: (a) Centrifugation**

The correct option is 1

Explanation:-

Centrifugation:-

• Centrifugation is a mechanical process used to separate different components of a mixture or a solution.

YourMockTest.com — Free Study Material

• It is a technique based on the principle of sedimentation.
• It is based on different factors like density, shape, size, and viscosity of the particles of mixture or solution.
• Centrifugation is done using a special device centrifuge.
Examples- extraction of fat from milk, separation of butter from curd, spin-drying of water, etc.

**Q19. Answer: (b) Threshing**

Concept:
Mixture:
• A mixture contains more than one substance or element or compound mixed in any proportion.
• These mixtures can be separated into pure substances using appropriate methods of separation.
Explanation:
Threshing:
• The process that is used to separate the grain from stalks etc. is threshing.
• In this process, the stalks are beaten to free the grain seeds.
Therefore, the correct answer is threshing.
Additional InformationHand-picking:
• The method in which substances in a mixture can be separated by just picking them out with the help of the hand from the mixture is known as the hand-picking method.
Sieving:
• Sieving is a method of using a sieve to distinguish small particles from bigger particles. Example- Husks and stones are extracted from wheat at the flour mill.
Winnowing:
• Winnowing is used to separate heavier and lighter components of a mixture by wind or by blowing air.
Sublimation:
• Sublimation is the conversion between the solid and the gaseous phases of matter, with no intermediate liquid stage.

**Q20. Answer: (b) Vitamin A**

The correct answer is Vitamin A.
• Golden Rice contains a high amount of Vitamin A.
Key Points
• Golden Rice is intended to produce a fortified food to be grown and consumed in areas with a shortage of dietary Vitamin A.
• It was claimed to be able to fight vitamin A deficiency, which is the leading cause of blindness among children and can also lead to death due to diseases like measles.
• It is developed through genetic engineering and produces two new enzymes that complete the beta-carotene expression in the rice grain.
• Golden rice is a genetically modified biofortified crop.
• It is genetically modified in order to produce beta carotene, which is not normally produced in rice.
• Beta carotene is converted into Vitamin A when metabolized by the human body.
• Biofortification is the idea of breeding crops to increase their nutritional value.
• This can be done either through conventional selective breeding or through genetic engineering.
• Vitamin A is also known as Retinol.
Additional Information
• Vitamin A is a fat-soluble vitamin that is good for healthy vision, skin, bones, and other tissues in the body.
• Sources of Vitamin A-
• Milk, Meat, Cheese, Liver, Halibut fish oil, cream, and kidneys.
• Vitamin B is a water-soluble vitamin
• The deficiency of Vitamin B leads to Beri Beri.
• Vitamin C is also known as ascorbic acid.
• It is a water-soluble vitamin.
• Vitamin C deficiency leads to Scurvy disease.
• Vitamin D is also known as Cholecalciferol.
• It is a fat-soluble vitamin.
• The deficiency of Vitamin D leads to Rickets and osteomalacia.

YourMockTest.com — Free Study Material

**Q21. Answer: (d) 4**

The correct answer is Option 4.

A normal adult has 32 teeth: incisors (8), Canines (4), premolars (8) and molars (12). Normal adult's 32 teeth is an upgrade form of a 20 piece "milk teeth" version.

| Types of teeth | Functions |
|---|---|
| Incisors | Used for cutting food into small chewable pieces |
| Canines | Grip and tear food |
| Premolars | Tear and crush food |
| Molars | Chew, crush and grind food |

**Q22. Answer: (b) Board**

An electronic circuit is composed of individual electronic components, such as resistors, transistors, capacitors, inductors and diodes, connected by conductive wires. Board is not a part of circuit.

**Q23. Answer: (d) 78**

• The atmosphere is composed of a mix of several different gases in differing amounts.

• The permanent gases present in the atmosphere are nitrogen, oxygen, carbon dioxide, helium and argon.

Key Points

The atmospheric composition of gases by volume are as follow:

| Permanent Gases of the Atmosphere | |
|---|---|
| Constituent | Percent by Volume |
| Nitrogen (N2) | 78.084 |
| Oxygen (O2) | 20.946 |
| Argon (Ar) | 0.934 |
| Carbon dioxide (CO2) | 0.036 |
| Neon (Ne) | 0.00182 |
| Helium (He) | 0.000524 |
| Krypton (Kr) | 0.000114 |
| Hydrogen (H2) | 0.00005 |

Thus, nitrogen constitutes 78% of our atmosphere.

**Q24. Answer: (a) Joule**

option(1)

CONCEPT:

• Energy: It is those physical quantities that are defined as the ability to work any work called energy.

• The S.I unit of energy is Joule.

EXPLANATION:

• The formula of Energy:

=> Energy = Power × Time or E = P × T

• Electric energy is also a form of energy, so its unit will also be joule.

• Other units are calories, etc.

Additional Information

• Power: It is those physical quantities defined as the rate of doing work in per unit of time is called Power

Power = Work/ Time = Energy /Time.

• Force: It is those physical quantities that are defined as the push or pull of an object.

• Its unit is Newton.

YourMockTest.com — Free Study Material

**Q25. Answer: (c) Volume decreases**

The correct answer is Volume decreases.

Key Points

• When ice melts it converts to water and the density of ice is less than of water, Hence volume will decrease.

• The ice shrinks (decreases volume) and becomes denser.

• Melting of ice cream is a physical change.

Important Points

• The density of water gradually increases as you cool it.

• When you reach 4^oC, its density reaches a maximum.

• When you cool it further to make some ice, i.e. 0^oC, water expands with a further drop in temperature, meaning the density of water decreases when you cool it from 4^oC to 0^oC.

**Q26. Answer: (b) methane**

The correct answer is Methane.

Key Points

• The major component of bio-gas and Compressed Natural Gas (CNG) is Methane.

Additional Information

• Bio-CNG contains about 92-98 % of methane and only 2-8 % carbon dioxide.

• The high methane content and calorific value combined with the low quantity of moisture, hydrogen sulphide and impurities makes Bio-CNG an ideal fuel for automobiles and power generation.

• Compressed natural gas is a fuel that can be used in place of gasoline, diesel fuel and liquefied petroleum gas (LPG).

• CNG is made by compressing natural gas, which is mainly composed of methane (CH4).

| Fuel Gases | Major component | Uses |
|---|---|---|
| Compressed natural gas (CNG) | Methane<br>Ethane | Can be used in place of gasoline, diesel fuel and liquefied petroleum gas (LPG) |
| Liquefied petroleum gas (LPG) | Butane<br>Propane | LPG is used for cooking.<br>An alternative to electric heating, heating oil, or kerosene.<br>As it is odourless so Ethyl Mercaptan is added to it so there may be smell if LPG leak from its storage container. |

**Q27. Answer: (b) Lactobacillus**

The correct answer is Lactobacillus.

Key Points

• Lactobacillus changes milk to curd by producing lactic acid and reducing the pH value of the milk.

• These bacteria change the lactose into lactic acid, which imparts a sour taste to curd.

• The procedure by which the change from milk to curd takes place is known as fermentation.

• The formation takes place when lactic acid reacts with the globular protein called casein present in milk.

Additional Information

• Yeasts are eukaryotic, single-celled microorganisms as part of the fungus kingdom.

• Moulds are neither plants nor animals; they are members of the kingdom Fungi.

• Algae are explained as a group of predominantly aquatic, photosynthetic, and nucleus-bearing organisms that lack the true roots, stems, leaves, and specialized multicellular reproductive parts of plants.

**Q28. Answer: (c) Bose-Einstein Condensate (BEC)**

The correct answer is Bose-Einstein Condensate (BEC).

Key Points

• Bose-Einstein Condensate (BEC) is considered the fifth state of matter, predicted by Satyendra Nath Bose and Albert Einstein in 1924-25.

• It is formed when a gas of bosons is cooled to temperatures very close to absolute zero (0 Kelvin or -273.15°C).

• At such extremely low temperatures, particles condense into the same quantum ground state, behaving as a single quantum entity.

• BEC was first realized experimentally in 1995 by Eric Cornell and Carl Wieman using rubidium atoms, earning them the 2001

Nobel Prize in Physics.

• This state exhibits unique properties like superfluidity and macroscopic quantum phenomena.

Additional Information

• States of Matter:

• The classical states of matter include solid, liquid, gas, and plasma.

• Plasma, the fourth state, is an ionized gas where electrons are separated from atoms, commonly found in stars.

• Superfluidity:

• A property of BEC where it flows without viscosity, meaning it can flow indefinitely without losing energy.

• Quantum Phenomena:

• BEC is a macroscopic demonstration of quantum mechanics, where particles act as a single coherent wave.

• Applications of BEC:

• Used in developing precise atomic clocks, quantum computing, and studying fundamental physics phenomena.

• Difference from Other States:

• Unlike other states, BEC occurs only at extremely low temperatures, and particles lose their individual identity, behaving collectively.

**Q29. Answer: (a) sterilization of milk**

The correct answer is sterilization of milk.

Key Points

• Pasteurization

• Pasteurization is a process in which milk is treated with mild heat to eliminate pathogens and extend the shelf life of milk.

• Sterilization refers to any process that removes, kills, or deactivates all forms of life such as fungi, bacteria, spores, etc.

• Louis Pasteur invented the process of Pasteurization.

• Pasteurization of milk requires temperatures of about 63° C (145° F) maintained for 30 minutes or, alternatively, heating to a higher temperature, 72° C (162° F), and holding for 15 seconds.

Additional Information

• Fermentation is a metabolic process that produces chemical changes in organic substrates through the action of enzymes.

• Distillation is the process of separating components of a mixture based on different boiling points.

• Dehydration occurs when more water and fluids leave the body than enter it. Even low levels of dehydration can cause headaches, lethargy, and constipation.

**Q30. Answer: (a) an oxidation reaction which is exothermic**

The correct answer is an oxidation reaction which is exothermic.

Concept:

Exothermic reactions

• Exothermic reactions are chemical reactions that release energy in the form of heat or light as they proceed.

Endothermic reactions

• Endothermic reactions are chemical reactions that absorb energy from their surroundings as they proceed.

Explanation:

• Respiration is the process by which cells of an organism obtain energy by combining oxygen and glucose.

• As a result of respiration, carbon dioxide, water, and energy are released.

• The chemical equation is

$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ + Energy

• Glucose reacts with oxygen to give energy that's why it is an oxidation reaction.

• In this reaction energy is released, it is also an exothermic reaction.

• Glucose oxidizes and releases energy in the human body.

• Thus, this reaction is reacted with oxygen called oxidation reaction.

Thus, the process of respiration is an oxidation reaction which is exothermic.

**Q31. Answer: (b) 952.25**

Given:

65% of 1465.

Solution:
To find 65% of 1465, we use the formula:
Percentage = (Percentage rate × Value) / 100
65% of 1465 = (65 × 1465) / 100 = 95225 / 100 = 952.25
Therefore, 65% of 1465 is 952.25.

**Q32. Answer: (a) Rs. 1,58,678**

Given:
20 men working for 10 days earn Rs. 71,800.
We need to find how much 26 men will earn in 17 days.
Calculation:
The total earnings are directly proportional to the number of men and the number of days they work.
Let the amount earned by 26 men in 17 days be x. We can set up the following proportion:
(20 × 10) / (26 × 17) = 71800 / x
=> 200 / 442 = 71800 / x
=> x = (71800 × 442) / 200
=> x = 31735600 / 200
=> x = Rs. 1,58,678
Therefore The correct answer is: Rs. 1,58,678

**Q33. Answer: (c) 8075**

Given:
7982 + 93 = ?
Calculation:
=> 7982 + 93 = 8075
Therefore The correct answer is: 8075

**Q34. Answer: (d) 60°**

Given:
We are asked to find the measure of each interior angle in an equilateral triangle.
Formula used:
Sum of interior angles of a triangle = 180°
In an equilateral triangle, all three angles are equal.
Calculation:
=> Each angle = 180° ÷ 3 = 60°
Therefore The correct answer is: 60°

**Q35. Answer: (a) 9.8**

Given:
x : 7 = 56 : 40
Method:
Use the property of proportions:
If a : b = c : d, then a × d = b × c
Calculation:
=> x × 40 = 7 × 56
=> x × 40 = 392
=> x = 392 ÷ 40
=> x = 9.8
Therefore The correct answer is: 9.8

**Q36. Answer: (a) 21250**

Given:
Present population = 17,000
Increase = 25%

YourMockTest.com — Free Study Material

Formula used:

Increased Population = Present Population × (1 + Percentage Increase/100)

Calculation:

=> Population = 17000 × (1 + 25/100)

=> Population = 17000 × 1.25

=> Population = 21,250

Therefore The population at the end of the year will be: 21,250

**Q37. Answer: (a) 12/25**

Given:

Percentage = 48%

Formula used:

Fraction = Percentage ÷ 100

Calculation:

=> 48% = 48 ÷ 100

=> 48 ÷ 100 = 12 ÷ 25

Therefore The simplified fraction form of 48% is: 12/25

**Q38. Answer: (c) 204**

Given:

Numbers = 206, 205, 90, 315

Formula used:

Average = (Sum of all numbers) ÷ (Total number of values)

Calculation:

=> Sum = 206 + 205 + 90 + 315 = 816

=> Average = 816 ÷ 4 = 204

Therefore The correct answer is: 204

**Q39. Answer: (a) 84**

Given:

Numbers = 21, 4, 28, 42

Calculation:

Prime Factorization

21 = 3 × 7

4 = 2 × 2

28 = 2 × 2 × 7

42 = 2 × 3 × 7

LCM = The highest powers of all prime factors

LCM = $2^2$ × 3 × 7 = 4 × 3 × 7 = 84

Therefore The Least Common Multiple (LCM) of 21, 4, 28, 42 is: 84

**Q40. Answer: (b) 204**

Given:

Expression = 12 × 18 - 12

Calculation:

12 × 18 - 12

=> 216 - 12

=> 204

Therefore The correct answer is: 204

**Q41. Answer: (c) 45**

Given:

Ratio of A : B = 5 : 2

Present age of B = 18 years

YourMockTest.com — Free Study Material

Formula used:

If A : B = 5 : 2 and B = 18, then A = (5/2) × 18

Calculation:

=> A = (5 × 18) ÷ 2

=> A = 90 ÷ 2 = 45

Therefore The present age of A is: 45 years

**Q42. Answer: (c) 24 cm**

Given:

Area of rectangle = 35 cm²

Length = 7 cm

Formula used:

Area = Length × Breadth

Perimeter = 2 × (Length + Breadth)

Calculation:

=> 35 = 7 × Breadth

=> Breadth = 35 ÷ 7 = 5 cm

=> Perimeter = 2 × (7 + 5) = 2 × 12 = 24 cm

Therefore The perimeter of the rectangle is: 24 cm

**Q43. Answer: (a) 48**

Given:

Total chocolates = 60

Percentage eaten = 20%

Formula used:

Chocolates eaten = (20/100) × 60

Chocolates left = Total - Eaten

Calculation:

=> Chocolates eaten = (20 × 60) ÷ 100 = 1200 ÷ 100 = 12

=> Chocolates left = 60 - 12 = 48

Therefore Ram has 48 chocolates left.

**Q44. Answer: (d) 243**

Given:

81/3 × 27/3 = ?

Calculation:

81/3 × 27/3 = ?

=> 81/3 = 27

=> 27/3 = 9

=> 27 × 9 = 243

Therefore The correct answer is: 243

**Q45. Answer: (a) a² + 2ab + b²**

Given:

(a + b)²

Formula used:

(a + b)² = a² + 2ab + b²

Explanation:

(a + b)2 = a2 + 2ab + b2

=> (a + b) × (a + b)

=> a² + ab + ba + b²

=> a² + 2ab + b²

Therefore (a + b)² = a² + 2ab + b²

YourMockTest.com — Free Study Material

**Q46. Answer: (c) Maternal grandfather**

Family chart:

Drawing the family tree,

So, the man is the maternal grandfather to that lady.

Hence, “Maternal grandfather” is the correct answer.

**Q47. Answer: (d) OMPYTAJW**

The positions of the letter according to the English alphabet series.

Logic: The position of each letter of the word get increase and decrease by 2 to get the code.

The pattern followed here is:

Similarly,

Hence, 'OMPYTAJW' is the correct answer.

**Q48. Answer: (c) 21 × 7 ÷ 7 + 3 - 21 = 3**

| **Symbol** | • | • | × | ÷ |
|---|---|---|---|---|
| Meaning | × | • | ÷ | _- |

Option 1:

14 ÷ 7 - 2 + 48 × 16

= 2 - 2 + 768

= 768

Option 2:

38 - 2 × 1 ÷ 6 + 6

= 38 - 0.33 + 6

= 43.67

Option 3:

21 ÷ 7 - 7 × 3 + 21

= 3 – 21 + 21

= 3

Option 4:

9 ÷ 3 - 12 × 5 + 24

= 3 - 60 + 24

= -33

Hence, option 3 is the correct answer.

**Q49. Answer: (a) 6**

According to the given information,

Here, we can see that the code for 'W' is '6'.

Hence, the correct answer is "6".

**Q50. Answer: (b) 29**

Total number of students = 45

Julie’s rank from left side = Total – right position + 1 = 45 – 17 + 1 = 29

Hence, Julie is 29^(th) from left end.

More previous year papers and mock tests: **www.yourmocktest.com/pyq**

YourMockTest.com — Free Study Material