Army Soldier GD Assam Regt Centre (Shillong) 27 Dec 2020 Official Paper. (Previous Year Paper)

Army GD Agniveer • 2020 • 50 questions • 60 minutes • Answer key and solutions

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GENERAL KNOWLEDGE

Q1. Who invented bicycle?

(a) Dunlop
(b) Baron Karl von Drais
(c) Franklin
(d) James Ritty

Q2. Which of the following is considered the oldest among the Vedas?

(a) Sam Veda
(b) Rig Veda
(c) Atharva Veda
(d) Yajur Veda

Q3. Who among the following is also known as the 'Iron man of India'?

(a) Subhash Chandra Bose
(b) Sardar Vallabhai Patel
(c) Rabindranath Tagore
(d) Mahatma Gandhi

Q4. Green colour in Indian National Flag signifies _____.

(a) Valour
(b) Sacrifice
(c) Relation to soil and prosperity
(d) Truth

Q5. Delhi is located on the banks of which river?

(a) Yamuna
(b) Gomati
(c) Gandak
(d) Sarayu

Q6. _____ is the highest mountain peak situated in India.

(a) Anamudi
(b) Kanchenjunga
(c) Satpura
(d) Mt. Everest

Q7. _____ is the state capital of Jharkhand.

(a) Allahabad
(b) Jamshedpur
(c) Ranchi

(d) Lucknow

Q8. Who was the second President of India?

(a) Dr. Zakir Hussain
(b) V V Giri
(c) Dr. S. Radha Krishnan
(d) Dr. Rajendra Prasad

Q9. India got freedom in the year _____.

(a) 1947
(b) 1946
(c) 1945
(d) 1950

Q10. The author of Anandmath was _____.

(a) S. C. Bose
(b) Bankim Chandra Chatterjee
(c) Sharat Chandra Chatterjee
(d) Ravindra Nath Chatterjee

Q11. Dhyan Chand was associated with which sport?

(a) Baseball
(b) Cricket
(c) Table Tennis
(d) Hockey

Q12. 'Thar Desert' is located in which country?

(a) Mongolia
(b) Nepal
(c) India
(d) Egypt

Q13. The electron was first identified by_____.

(a) James Chadwick
(b) D. Rutherford
(c) JJ Thomson
(d) J. Kepler

Q14. Which is the largest bird in the world?

(a) Albatross
(b) Ostrich
(c) Peacock
(d) Emu

Q15. The first battle of Panipat was between _____.

(a) Babar & Ibrahim Lodhi
(b) Maharana Pratap & Babar
(c) Akbar and Hemu
(d) Sher Shah Suri & Akbar

GENERAL SCIENCE

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Q16. Which one of the following disease is caused by virus?

(a) Malaria
(b) Common Cold
(c) Typhoid
(d) Cholera

Q17. Blood pressure is controlled by which gland?

(a) Adrenal gland
(b) Thymus
(c) Corpus luteum
(d) Thyroid gland

Q18. Antibiotic penicillin is obtained from _____.

(a) Virus
(b) Protozoan
(c) Fungus
(d) Bacteria

Q19. Which is the largest bone in the human body?

(a) Radius
(b) Tibia
(c) Femur
(d) Humerus

Q20. Bromine is a:

(a) Non-metal
(b) Metalloid
(c) Plastic
(d) Metal

Q21. A homogenous mixture of two or more metals is called _____.

(a) Compound
(b) Polymer
(c) Alloy
(d) Fiber

Q22. Snakes belong to which animal class?

(a) Vertebrata
(b) Reptiles
(c) Amphibia
(d) Mammalia

Q23. The intensity of an earthquake is measured on _____.

(a) Secant Scale
(b) Weighing Scale
(c) Richter Scale
(d) Mercalli scale

Q24. Saliva helps in digestion of _____.

(a) Starch
(b) Fiber
(c) Proteins
(d) Fats

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Q25. Atoms of the same element having different mass numbers are called _____.

(a) Isotopes
(b) Nucleons
(c) Neutrons
(d) Transmutation

Q26. H2O2is Chemical formula for _____.

(a) Hydrogen Oxide
(b) Hydrogen Peroxide
(c) Water
(d) Oxygen Hydride

Q27. _____ is essential in soil for plant growth.

(a) Oxygen
(b) Carbon dioxide
(c) Hydrogen
(d) Nitrogen

Q28. Which of the following is used in thermometer?

(a) Gold
(b) Silver
(c) Mercury
(d) Copper

Q29. Which of the following is most suitable for electric wiring?

(a) Zinc
(b) Copper
(c) Iron
(d) Steel

Q30. Lightest gas is _____.

(a) N
(b) O
(c) H
(d) CO2

MATHEMATICS

Q31. The circumference of a circle is 88 meters. Find its radius?

(a) 14 mtr
(b) 6 mtr
(c) 12 mtr
(d) 10 mtr

Q32. Find the blank: - $(212)^2$ = _____

(a) 44410
(b) 40406
(c) 40404
(d) 44944

Q33. From the given options complete the series:

4, 9, 16, 25, _____

(a) 36
(b) 28

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(c) 30
(d) 26

Q34. Find the value of: ((64)^(2/3))^(1/2)
(a) 32
(b) 16
(c) 04
(d) 08

Q35. An employee is required to contribute 10% of his pay to General Provident Fund. If he gets Rs. 13500 at net pay in a month after deduction, then what is the monthly General Provident Fund contribution (assuming no other deductions)?
(a) Rs. 1500
(b) Rs. 1215
(c) Rs. 1650
(d) Rs. 1350

Q36. The cost of 950 kg mangoes is Rs. 38,000, find the cost of 555 kgs of mangoes?
(a) Rs. 26,222
(b) Rs. 22,222
(c) Rs. 22,200
(d) Rs. 37,050

Q37. What approximate value will come in place of the question mark(?)
145% of 700.05 + 22.00 × 15.5 = ?
(a) 1521.0725
(b) 1356.0725
(c) 1225.0725
(d) 1459.0

Q38. Find the average of 10, 20, 30, 40, 50.
(a) 30
(b) 40
(c) 20
(d) 25

Q39. If the simple interest in 3 years at the annual rate of 5% is Rs. 180 then find the Principle amount?
(a) Rs. 1000
(b) Rs. 1200
(c) Rs. 1100
(d) Rs. 1300

Q40. Find the area of a circle made of 1 mtr wire?
(a) 795.45 cm^2
(b) 998 cm2
(c) 799 cm2
(d) 896 cm2

Q41. If 3 : 8 = 6 : x, then the value of x is?
(a) 7
(b) 6
(c) 16
(d) 9

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Q42. 45% of 640 + 64% of 450 = ? of 1440

(a) 0.5
(b) 0.4
(c) 0.54
(d) 0.45

Q43. If r + s = - 8, rs = -12, then $r^2 + s^2$ =?

(a) 74
(b) 78
(c) 64
(d) 88

Q44. If the product of two numbers is 4725 and their HCF is 15. What will be LCM of these numbers?

(a) 315
(b) 180
(c) 345
(d) 265

Q45. A train travels at a speed of 75 km per hour. How many kms will it travel in 45 minutes?

(a) 50 km
(b) 60 km
(c) 56.25 km
(d) 55.5 km

LOGICAL REASONING

Q46. In a certain code 'CLOCK' is written as 'KCOLC'. Find out how 'STEPS' be written in that code?

(a) SPEST
(b) SPETS
(c) PESTS
(d) SEPTS

Q47. Which letters completes the series X, U, R, O, L, ?

(a) G
(b) I
(c) H
(d) J

Q48. P is the mother of K; K is the sister of D; D is the father of J. How P is related to J?

(a) Data inadequate
(b) Grandmother
(c) Aunt
(d) Mother

Q49. From the option find the next term of the sequence:

ZA, YB, XC, WD, _____

(a) VF
(b) EV
(c) VE
(d) EU

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Q50. In a row of trees, a tree is 7th from left end and 14th from right end. How many trees are there in the row?

(a) 20
(b) 19
(c) 21
(d) 22

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Baron Karl von Drais

The correct answer is Baron Karl von Drais.

Key Points

• Baron Karl von Drais:
• German forest official and significant inventor.
• He was born on April 29, 1785, in Germany.
• He was famous for the invention of the Bicycle.
• He died in 1851.

Additional Information

• Dunlop: Famous for the invention of Tyres.
• Benjamin Franklin: Known for the invention of the lightning rod, bifocals.
• James Ritty: Invented Cash Register

Q2. Answer: (b) Rig Veda

The correct answer is Rig Veda.

Key Points

• Rig Veda:
• Rig Veda is the oldest Veda.
• It is one of the four canonical sacred texts of Hinduism known as the Vedas.
• The text is a collection of 1,028 hymns and 10,600 verses.
• The Rigveda is divided into 10 mandalas (books).
• The first and tenth Mandalas are the youngest and the longest.
• The Gayatri mantra in Rig Veda is taken from Mandala 3.
• Mandala 9 is completely devoted to Soma.
• The 10th mandala contains the Purusha Sukta which explains the 4 Varnas that were born from the Mouth, arms, thighs, and feet of the Brahma or Purusha.
• Nasadiya Sukta which talks about the origin of the Universe is in the 10th Mandala.

Additional Information

• Vedas are supposed to be the first religious text of the Hindu religion.
• Veda means knowledge.
• There are four Vedas namely,
• Rig Veda - Oldest and most important Veda, collection of 1,028 hymns and 10,600 verses.
• Yajur Veda - Only Veda, which is divided into two parts (i.e. Krishna Yajur Veda and Shukla Yajur Veda), contains the knowledge of all sacrificial formulas and weapons.

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• Sam Veda - It is the Origin of Indian classical music.

• Atharva Veda - It contains the knowledge of Ayurveda, also charms and spells hence it is known as black Veda.

Q3. Answer: (b) Sardar Vallabhai Patel

The correct answer is Sardar Vallabhai Patel.

Key Points

• Vallabhbhai Patel popularly known as Sardar Patel was an Indian politician.

• He served as the First Deputy Prime Minister of India.

• He was an Indian barrister and a senior leader of the Indian National Congress who played a leading role in the country's struggle for independence and guided its integration into a united, independent nation.

• He is widely regarded as 'Iron Man of India'.

Additional Information

• He is also remembered as the "patron saint of India's civil servants" for having established the modern all-India services system.

• He is also called the "Unifier of India".

• He was the first Home Minister and Deputy Prime Minister of India.

• The Statue of Unity, the world's tallest statue, was dedicated to him on 31 October 2018 which is approximately 182 meters (597 ft) in height

Important Points

• Subhash Chandra Bose is known as Netaji.

• Mahatma Gandhi is known as the Father of the Nation.

• Rabindranath Tagore is known as Gurudev.

Q4. Answer: (c) Relation to soil and prosperity

The correct answer is Relation to soil and prosperity.

Key PointsNational Flag:

• The national flag is a horizontal tricolour of deep saffron at the top, white in the middle, and dark green at the bottom in equal proportion.

• Saffron stands for courage.

• White stands for truth and purity.

• Green is the symbol of life, abundance, relation to soil, and prosperity.

• The ratio of the width of the flag to its length is 2:3.

• Its design is that of the wheel which appears on the abacus of the Sarnath Lion Capital of Ashoka.

• Its diameter approximates the width of the white band and it has 24 spokes.

• The design was given by Pingali Venkaiya.

• The design of the National Flag was adopted by the Constituent Assembly of India on 22 July 1947.

• It is our Fundamental Duty to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.

Q5. Answer: (a) Yamuna

The correct answer is the Yamuna.

Key Points

• Yamuna River System

• The Yamuna River is the largest tributary of the Ganga River.

• It originates from the Yamunotri glacier, at the Bandarpoonch peak in Uttarakhand.

• The main tributaries joining the river include the Sin, Hindon, Betwa Ken, and Chambal.

• The Tons is the largest tributary of the Yamuna

• The catchment of the river extends to the states of Delhi, Himachal Pradesh, Uttar Pradesh, Haryana, Rajasthan, and Madhya Pradesh.

• The national capital, New Delhi is situated on the banks of the river Yamuna.

• Length: 1376 km.

Additional Information

• New Delhi:

• The foundation of New Delhi, the capital of India, was laid by the then Emperor George V.

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• During the Delhi Durbar on 12 December 1911, it was announced to shift the capital of India from Kolkata to Delhi.
• On 13 February 1931, Lord Irwin, the Viceroy of India, inaugurated Delhi as the new capital of the country.
• Kolkata was the capital of the country until 1911 before the capital of India became New Delhi.
• New Delhi is the seat of the Indian Parliament, Central Secretariat, Supreme Court, Rashtrapathi Bhavan.

All major rivers of India:

Q6. Answer: (b) Kanchenjunga

The Correct answer is Kanchenjunga.

Key Points

• Kanchenjunga is the highest peak in India situated in Sikkim.
• Its height is about 8,586 meters.
• It is the 3rd highest mountain in the world.
• It is the natural habitat of Asian black bears, Red pandas, white-bellied musk deer, Chestnut-breasted Partridge, blood pheasant, and snow leopard.
• There are a total of 14 protected areas in the regions of Kanchenjunga.

Important Points

• Khangchendzonga National Park is a National Park and a Biosphere Reserve in Sikkim listed in UNESCO World Heritage Sites in July 2016.
• It is India's first mixed heritage site, also included in UNESCO Man and the Biosphere Programme.

Additional Information

• Anamudi: The highest peak in the western ghats.
• Satpura: The range of hills in central India.
• Mount Everest: World's highest mountain.

All the major peaks and ranges of India:

Q7. Answer: (c) Ranchi

The correct answer is Ranchi.

Key Points

• Jharkhand.
• Jharkhand state was formed on 15 November 2000.
• Capital: Ranchi.
• Governor of Jharkhand: Draupadi Murmu.
• Chief Minister of Jharkhand: Hemant Soren.
• Palash is the state flower of Jharkhand.
• State animal of Jharkhand: Indian elephant.
• State bird of Jharkhand: Asian Koel.
• The official language of the state is Hindi.
• The largest city of the state is Jamshedpur and it is the first planned industrial city in India.
• Lok Sabha seats - 14.
• Rajya Sabha seats - 6.

Additional Information

• Lucknow: Capital of Uttar Pradesh.
• Jamshedpur: Largest city of the Jharkhand. The city is the industrial capital of India and is known as the "Pittsburg of India".
• Allahabad: It is the most populous city in the state of Uttar Pradesh.

All state capitals of India:

Q8. Answer: (c) Dr. S. Radha Krishnan

The correct answer is Dr S. Radha Krishnan.

Key Points

• Dr S. Radha Krishnan:
• Sarvepalli Radhakrishnan was an Indian philosopher and statesman and was the First vice president of India (1952–1962) and the second president of India from 1962 to 1967
• He was one of India's most distinguished twentieth-century scholars of comparative religion and philosophy, his academic

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appointments included professor of Philosophy at the University of Mysore (1918-1921), the King George V Chair of Mental and Moral Science at the University of Calcutta (1921–1932) and Spalding Professor of Eastern religion and ethics at university of oxford (1936–1952).

• Radhakrishnan was awarded several high awards during his life, including a knighthood in 1931, the Bharat Ratna, the highest civilian award in India, in 1954, and honorary membership of the British Royal Order of Merit in 1963.

• He was also one of the founders of Helpage India, a non-profit organisation for the elderly underprivileged in India.

• Radhakrishnan believed that "teachers should be the best minds in the country".

• Since 1962, his birthday is being celebrated in India as Teacher's day on 5 September.

Additional Information

• Dr. Zakir Hussain: Third President of India.

• V V Giri: Fourth President of India.

• Dr. Rajendra Prasad: First President of India.

List of All Presidents of India:

Q9. Answer: (a) 1947

The correct answer is 1947.

Key Points

• India got Independence on August 15, 1947.

• India got its Independence after 300 years of struggle against British Domination.

• Indian freedom Struggle was lead by Mahatma Gandhi, The Father of the Nation.

Additional Information

• Lord Mountbatten was the last Governor-General of British India before Independence on 15th August 1947.

• When India got Independence, Clement Attlee was the Prime Minister of England.

• The speech of Jawaharlal Nehru on the eve of independence was called Tryst with destiny.

Indian Independence Act:

• The British Parliament brought the Indian Independence Act in July 1947.

• The Labour government of England headed by Clement Attlee drafted the legislation which was based on the agreement, known as the Mountbatten Plan, which came into being between the last Governor-General Lord Mountbatten, leaders of Indian National Congress, Muslim League, and the Sikh community.

• Salient features of the; Indian Independence Act

• The Act received approval from the British royalty on 18 July 1947.

• According to this Act, British India would be divided into two separate dominions i.e., India and Pakistan.

• Pakistan thus formed comprised West Pakistan (which is present-day Pakistan), East Pakistan (which is present-day Bangladesh), Baluchistan, and Sind.

• The post of Governor-General will continue in the two dominions and will work as the representatives of the Crown.

• The Constitutional Assemblies of the two nations would enjoy their respective legislative authorities.

• As per the Act, India and Pakistan would be granted independence with effect from 15 August 1947.

• The princely states were given the choice of either joining India/Pakistan or remaining independent.

• The British emperor would no longer be called the Emperor of India.

Q10. Answer: (b) Bankim Chandra Chatterjee

The correct answer is Bankim Chandra Chatterjee.

Key Points

• Anandmath:

• The famous book 'Anandmath' was authored by Bankim Chandra Chatterjee.

• The book was originally written in 1882.

• Anandamath takes the reader back to Bengal in the clutches of the famine, the backdrop of the pre-independence struggle, and the turmoil of human lives caught in this frame of time.

• It is considered one of the most remarkable works of the Bangla language and Indian literature.

• Through the book, Bankim also gave us the song 'VandeMataram'which became the rallying call for rebels.

• The first two stanzas eventually became the National song of India.

• One of the gems of Indian Literature, 'Anandmath' carries a deep sentiment of nationalism which was the essence of the freedom struggle.

Additional Information

• Bankim Chandra Chatterjee -
• Bankim Chandra Chatterjee was born on 27 June 1838 in a Brahmin family in Kanthalpara village in Bengal.
• Vande Mataram was composed in a mixed language (Sanskrit-Bengali) by Bankim Chandra Chatterjee.
• This song was published in the year 1872 as an underlying song in his novel Anand Math.
• In this novel, this song is sung by a monk named "Bhawanand".
• Its tune was composed by Yadunath Bhattacharya. This song takes 65 seconds to sing.

Q11. Answer: (d) Hockey

The correct answer is Hockey.

Key Points

• Hockey:
• It is a stick and ball game.
• In each team, there are 11 players.

Image of a hockey stick:

Additional Information

• DHYAN CHAND: (29 August 1905 – 3 December 1979)
• Greatest Hockey player of all time.
• Under his leadership, India won 3 Olympic Hockey medals in 1928,1932,1936.
• Because of His extraordinary goal-scoring skills, He was widely known as "The Wizard" or " The Magician".
• He served as a Major in the Indian Army.
• He was awarded Padma Bushan in 1956.
• He wrote an autobiography named " Goal".
• His Birthday, August 29, is celebrated as National Sports Day.

• Dhyan Chand Award:
• It is the lifetime achievement award given to personalities who provide an immense contribution to the sports field.
• It is named after the legendary Hockey player Dyan Chand.
• It was instituted in 2002.
• Ministry of Youth Affairs and Sports presented this award annually.
• The award comprises a statuette, certificate, ceremonial dress, and a cash prize of 10 lakh rupees.

Sports Term of Chess	**Gambit, move, resign, stalemate, checkmate, Grandmaster, international master, Kings Indian Defence, etc.**
Sports Term of Tennis	Service, Grandslam, Deuce, Advantage, Game Point, Breakpoint, Smash, Shot, Break, Grass Court, Drop shot, Netplay, Baseline, etc.
Sports Term of Basketball	Free throw, Common foul, Underhead, Technical foul, Overhead, etc.
Sports Term of Baseball	Pinching, Homerun, Base runner, Perfect game, Throw, Strike, Put out, etc.

Q12. Answer: (c) India

The correct answer is India.

Key Points

• Thar Desert:
• The Indian desert is also known as the Thar Desert or the Great Indian Desert.
• It is located partly in Rajasthan state, northwestern India, and partly in Punjab and Sindh (Sind) provinces, eastern Pakistan.
• The Thar Desert also called the Great Indian Desert covers more than 77,000 square miles (200,000 sq. km), forming a natural border between India and Pakistan.
• It is a large arid region with a landscape dominated by sand dunes varying in size from 52ft (16m) in the North to 498ft (152m) in the south.
• The Climate in the Thar desert is like any other desert, Hot in the day and cool at night.

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• The summer days are really hot and the nights are cool but the winter days are warm and the nights are cold. In the summer there is little to no rain.

Additional Information

• The largest desert on earth is the Antarctic desert, covering the continent of Antarctica with a size of around 5.5 million square miles.

• The term desert includes polar deserts, subtropical deserts, cold winter, and cool coastal deserts, and are based on their geographical situation.

All the major deserts of the world:

Q13. Answer: (c) JJ Thomson

The correct answer is JJ Thomson.

Key Points

• JJ Thomson

• A British physicist J.J.Thomson Heightened the theory of Dalton.

• Thomson found the existence of extremely minute particles inside the atom.

• He compared the atom with a 'watermelon' in which the Red part resembles the positively charged portions while the black seed resembles the negatively charged electrons.

• The atom itself is neutral in nature, as it has equal positive and negative charged electrons.

• Thomson discovered 'Electrons' for which he got Nobel prize in 1906 A.D.

• Thomson proposed a better atomic theory than Dalton's atomic model.

• According to him, a positive charge is dispersed everywhere and the idea that atoms are made up of negative electrons embedded in a gel of positive charge was wrong.

• Electrons were accidentally discovered by J. J. Thomson while studying the cathode rays.

• The name electron was given by 'stony'.

• Cathode rays are emitted from the cathode in a straight line if these rays strike metal objects there is the formation of 'X-rays'.

Additional Information

• James Chadwick-

• Sir James Chadwick was awarded the 1935 Nobel Prize in Physics for his discovery of the neutron in 1932.

• By 1920, physicists knew that most of the mass of the atom was located in a nucleus at its center and that this central core contained protons.

• In May 1932 James Chadwick announced that the core also contained a new uncharged particle, which he called the neutron.

• Rutherford-

• Rutherford overturned Thomson's atom model in 1911 with his well-known Gold Foil experiment.

• Rutherford made an experiment, he beamed alpha particles through a thin gold foil. From this, he came to know that:

• Most alpha particles passed through the gold foil, very few particles bounced back exactly towards the source.

• Some of the particles deviated at various angles.

• He concluded that an atom has a tiny, dense, 'positively charged' core, where all mass is concentrated; known as Nucleus.

• The thickness of gold foil - 0.00004 cm.

• Alpha particle - A helium nucleus.

• John Dalton-

• In 1803 A.D. he put forth his famous atomic theory.

• The matter is made up of small particles called atoms.

• Atoms can not be created, divided into smaller particles, nor destroyed in the chemical process.

• Atom is a rigid and massive ball-like structure.

Q14. Answer: (b) Ostrich

The correct answer is Ostrich.

Key Points

• Ostrich:

• Struthio is a genus of birds in the order Struthioniformes, whose members are the ostriches.

• It is part of the infra-class Palaeognathae, a diverse group of flightless birds also known as ratites that include the emus, rheas, and kiwis.

• There are two living species of ostrich, the common ostrich, and the Somali ostrich.

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• They are large flightless birds of Africa who lay the largest eggs of any living land animal.
• With the ability to run at 70 km/h (43.5 mph), they are the fastest birds on land.

Additional Information
• Albatross:
• Albatrosses are very large seabirds in the family Diomedeidae.
• They range widely in the Southern Ocean and the North Pacific.
• Emu:
• The emu (Dromaius novaehollandiae) is the second-largest living bird by height, after its ratite relative, the ostrich.
• It is endemic to Australia where it is the largest native bird.
• Peacock:
• Peacocks are ground feeders that eat insects, plants, and small creatures.
• There are two familiar peacock species.
• The blue peacock lives in India and Sri Lanka,
• While the green peacock is found in Java and Myanmar (Burma).
• Study of bird - Ornithology
• Smallest bird - Bee Hummingbird
• Fastest flying bird - peregrine
• Slowest flying bird - American woodcock
• Fastest bird on land - Ostrich
• The national bird of India - Peacock

Q15. Answer: (a) Babar & Ibrahim Lodhi

The correct answer is Babar & Ibrahim Lodhi.

Key Points
• The First Battle of Panipat:
• The first battle of Panipat was fought in 1526 between Babur and Ibrahim Lodi.
• In 1526, the Mughal forces of Babur, the Timurid ruler of Kabulistan, defeated the much larger ruling army of Ibrahim Lodi, Sultan of Delhi.
• Panipat was a legendary location where after 1526, multiple battles were fought between the Mughal and varying other forces.
• He was invited by Daulat Khan, the governor of Punjab, to invade the region and unsettle Ibrahim Lodi.
• Lodi’s army relied heavily on cavalry and especially on elephants, which in earlier times, could shock the enemy and rout them.
• This battle made the foundation of the Mughal dynasty in India.

Additional Information
• Second Battle of Panipat (1556):
• It was fought between Hemu Vikramaditya and Akbar.
• Date: November 5, 1556.
• Third Battle of Panipat (1761):
• It was fought between Marathas and Ahmad Shah Durrani.
• Date: 14 January 1761.

Q16. Answer: (b) Common Cold

The correct answer is Common Cold.

Key Points
• Virus:
• A virus is a submicroscopic infectious agent that replicates only inside the living cells of an organism.
• Viruses can infect all types of life forms, from animals and plants to microorganisms, including bacteria.

Pathogen	Disease
Protozoa	Malaria
Bacteria	Cholera
Typhoid	

Tuberculosis	
Plague	
Fungi	Ringworm
Tinea	
Virus	AIDS
Common Cold	
Hepatitis B	
Polio	
Dengue Fever	

Q17. Answer: (a) Adrenal gland

The correct answer is Adrenal gland.

Key Points

• The adrenal gland is also termed as suprarenal glands. It is an endocrine organ that produces a variety of organs.

• The zona glomerulosa of the adrenal gland produces a mineralocorticoid hormone called aldosterone which helps in maintaining blood pressure.

Additional Information

• The adrenal glands are small glands located on top of each kidney.

• The adrenal cortex - the outer part of the gland - produces hormones that are vital to life, such as cortisol (which helps regulate metabolism and helps your body respond to stress) and aldosterone (which helps control blood pressure).

• The adrenal cortex produces several hormones.

• The most important are aldosterone (a mineralocorticoid), cortisol (a glucocorticoid), and androgens and estrogen (sex hormones).

• These hormones help regulate metabolism, immune system, blood pressure, response to stress, and other essential functions.

Q18. Answer: (c) Fungus

The correct answer is Fungus.

Key Points

• Antibiotics influence and interfere with the fungus' metabolic process and ultimately kill it.

• Penicillium notatum or P. chrysogenum (fungus) is used to produce the antibiotic penicillin.

Additional Information

• Fungi:

• Fungi are eukaryotic organisms that include microorganisms such as yeasts, moulds, and mushrooms.

• These organisms are classified under kingdom fungi.

• The organisms found in Kingdom fungi contain a cell wall and are omnipresent.

• They are classified as heterotrophs among living organisms.

• Characteristics of Fungi

• Fungi are eukaryotic, non-vascular, non-motile, and heterotrophic organisms.

• They may be unicellular or filamentous.

• They reproduce by means of spores.

• Fungi exhibit the phenomenon of alternation of generation.

• Fungi lack chlorophyll and hence cannot perform photosynthesis.

• Fungi store their food in the form of starch.

• Biosynthesis of chitin occurs in fungi.

• The nuclei of the fungi are very small.

• The fungi have no embryonic stage. They develop from the spores.

• The mode of reproduction is sexual or asexual.

• Some fungi are parasitic and can infect the host.

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• Fungi produce a chemical called pheromone which leads to sexual reproduction in fungi.

Q19. Answer: (c) Femur

The correct answer is Femur.

Key Points

• The largest bone in the human body is the femur, the thighbone.

• It is the largest, longest, and strongest bone in the human body.

• The femur runs from the keen to the hip.

Additional Information

• Our body comprises 206 bones. Among them, the longest and shortest bone are mentioned here.

• The longest bone:

• The Femur or thigh bone is the largest and heaviest bone in the human body. At the proximal end of the Femur, there is a rounded prominence which is called the Head of the Femur.

• It is the largest, longest, and strongest bone in the human body.

• The femur runs from the keen to the hip. It carries all the upper body weight.

• The other parts of the leg are the tibia, femur, fibula, and keep cap also known as patella.

• The shortest bone:

• The smallest bone in the human body is called stapes, located in the middle ear.

• The size of the staples is 3mm × 2.5mm.

• There are three bones in the middle ear – Malleus, stapes, and Incus.

• The Stapes is the smallest of the three bones and it looks like a bell.

Hint

Q20. Answer: (a) Non-metal

The correct answer is Non-metal.

Key Points

• It is the third-largest halogen and at room temperature, it appears as a fuming red-brown liquid.

• Its symbol is "Br" and atomic number 35.

Additional Information

• What is Bromine?

• Bromine is a chemical element with the appearance of a deep red, noxious liquid being one of the members of the halogen elements of the periodic table.

• This element has an appreciable vapour pressure at room temperature.

• Bromine Uses

• Bromine is a good oxidizing agent like other chlorine water and more useful as it does not decompose readily.

• It also liberates free iodine from iodide-containing solutions and sulfur from hydrogen sulfide.

• Sulfurous acid is oxidized to sulfuric acid by bromine water.

• Properties of Bromine

• The electron affinity of this metal is very high and much similar to chlorine.

• It is a less powerful oxidizing agent as compared to the chloride ion and that too because of weaker hydration of the bromide ion.

• The electron affinity of this metal is very high and much similar to chlorine.

• It is a less powerful oxidizing agent as compared to the chloride ion and that too because of weaker hydration of the bromide ion.

• A metal-bromine bond is also weaker than the corresponding metal-chlorine bond.

Q21. Answer: (c) Alloy

The correct answer is Alloy.

• An alloy is a homogenous mixture of two or more metals or non-metals or nonmetals mixed in a molten state.

• It can either be a solid solution of the elements of a single-phase or a mixture of two or more metallic phases

Additional Information

• Alloys

• Alloys are metal mixtures with other elements, the precise combination of which is governed by the properties required. In general, alloys are considered metallic in nature, i.e. they have good thermal and electrical conductivity.

• Definition

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• Alloys are combinations of metals or metals and other elements. Certain other metals/elements can be added to the metals in specific ratios to form alloys to confer certain properties to metals or strengthen some of their present properties.

• So, in a simpler words - An alloy is a homogeneous mixture of two or more metals or a metal and a non-metal.

• Example

• Pure aluminium is a relatively soft metal. Pure copper is also quite soft. However, when aluminium is alloyed with copper, the resulting alloy's strength is far greater than that of its parent metals.

• The other important examples of alloys are listed below.

• Steel

• Nichrome

• Bronze

• Brass

• Duralumin

• Solder

Q22. Answer: (b) Reptiles

The correct answer is Reptiles.

Key Points

• Snakes belong to the animal class reptiles. This group also includes crocodiles, lizards, and turtles.

• Reptiles are cold-blooded animals that raise their body temperature by lying in the sun or lower it by crawling into the shade.

• Their body temperature changes to the temperature of their surroundings. Because of this, snakes that live in colder climates must hibernate through the winter.

• There are more than 2,900 species of snakes in the world.

Additional Information

• Characteristics of Reptilia

• Following are the important characteristics of the animals belonging to Class Reptilia:

• These are creeping and burrowing terrestrial animals with scales on their body.

• They are cold-blooded animals found in most of the warmer regions of the world.

• Their skin is dry, and rough, without any glands.

• The body is divided into head, neck, trunk, and tail.

• Few of these shed the scales on their skin as skin cast.

• The respiration takes place with the help of the lungs.

• The skull is Monocondylic.

• They have two pairs of pentadactyl limbs, each bearing claws. Snakes are an exception.

• The heart is 3 chambered. However, crocodiles have a 4-chambered heart.

• The nervous system comprises 12 pairs of cranial nerves.

• The lateral line system is absent in reptiles.

• Except for snakes, all the reptiles have well-developed ears.

• They possess a typical cloaca.

• Amphibians

• Amphibians are organisms that live dual life. They can live on land as well as in water.

• They have porous skin that requires moisture. Also, amphibians lay eggs in the water, and their young have gills to survive in the water.

• They venture onto land only when fully mature.

Image:

Q23. Answer: (d) Mercalli scale

The correct answer is the Mercalli scale.

Key Points

Richter scale:

• The earthquake events are scaled either according to the magnitude of the shock.

• The magnitude is expressed in absolute numbers, 0-10.

• The power of an earthquake is expressed in terms of magnitude on a scale called the Richter scale.

• It is also known as the Richter magnitude scale.

• This was developed by Charles F. Richter in 1935.

Modified Mercalli Scale:

• The intensity of an earthquake is measured by the Modified Mercalli Scale.

• It is named after Mercalli, an Italian seismologist.

• It measures the energy released during the earthquake.

• The intensity scale takes into account the visible damage caused by the event.

• The range of intensity scale is from 1-to 12.

Mistake Points

• Mercalli scale is used to measure the intensity of an earthquake while Richter Scale is used to measure the magnitude scale of an earthquake.

• Richter Scale measurements are denoted from 0-10.

Important Points

• Magnitude measures the energy released at the source of the earthquake. Magnitude is determined from measurements on seismographs.

• Intensity measures the strength of shaking produced by the earthquake at a certain location. Intensity is determined by its effects on people, human structures, and the natural environment.

Additional Information

• Seismographs are instruments used to record seismic waves. Seismic waves are the vibrations from earthquake that travel through the Earth.

• There are four seismic zones (II, III, IV, and V) in India based on scientific inputs relating to seismicity.

• Previously, earthquake zones were divided into five zones with respect to the severity of the earthquakes but the Bureau of Indian Standards (BIS) grouped the country into four seismic zones by unifying the first two zones.

• BIS is the official agency for publishing seismic hazard maps and codes.

Q24. Answer: (a) Starch

The correct answer is Starch.

Key Points

• Saliva is a watery and usually somewhat frothy substance produced in the mouths of some animals, including humans.

• Produced in salivary glands, saliva is 98% water, but it contains many important substances, including electrolytes, mucus, antibacterial compounds, and various enzymes.

• The digestive functions of saliva include moistening food and helping to create a food bolus, so it can be swallowed easily.

• Saliva contains the enzyme amylase that breaks some starches down into maltose and dextrin.

• Thus, digestion of food occurs within the mouth, even before the food reaches the stomach.

• Saliva does not digest the proteins. fats and fibres.

Hint

Q25. Answer: (a) Isotopes

The correct answer is Isotopes.

Key Points

• Isotopes

• Atoms of the same element can have different mass numbers, and these are called isotopes.

• Those elements that have the same atomic number but a different mass number are referred to as isotopes.

• Isotopes occur due to the presence of a different number of neutrons in elements having the same atomic number as mass number is the sum of the number of neutrons and protons.

• Many but not all elements have isotopes. The isotopes of hydrogen are protium (which has one proton and no neutrons), deuterium (which has one proton and one neutron), and tritium (which has one proton and two neutrons).

• The chemical properties of isotopes are the same owing to the fact that they have the same number of protons and hence the same number of electrons which determines the chemical properties of an element.

• Isobars

• Isobars are atoms having the same mass number but a different atomic number.

• For example, the atomic number of carbon and nitrogen is 6 and 7 respectively.

• Carbon-14 an isotope of carbon has a mass number of 14 which is the same as that of nitrogen and hence carbon-14 and nitrogen are isobars.

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Q26. Answer: (b) Hydrogen Peroxide

The correct answer is Hydrogen Peroxide

Key Points

• Hydrogen peroxide is the simplest kind of peroxide available (oxygen-oxygen single bond).

• It is a colourless liquid and is used in an aqueous solution for safety reasons. It acts as a bleaching agent and is also used as a disinfectant.

• Concentrated hydrogen peroxide is a very reactive oxygen species and is used as a propellant in rocketry.

• The chemical formula for hydrogen peroxide is H_2O_2.

• Concept:

• H_2O_2 can act as both oxidizing and reducing agent in both acidic and basic medium.

• H_2O_2 as oxidizing agent:

• In acidic medium:

• $H_2O_2 + 2H^+ + 2e^- \rightarrow 2H_2O$

• In basic medium:

• $H_2O_2 + 2\,O\text{-}H + 2e^- \rightarrow 2H_2O + 2O^{2-}$

• H_2O_2 as reducing agent:

• In acidic medium:

• $H_2O_2 \rightarrow O_2 + 2H^+ + 2e^-$

• In basic medium:

• $H_2O_2 + 2OH^- \rightarrow O_2 + 2H_2O + 2e^-$

Q27. Answer: (d) Nitrogen

The correct answer is Nitrogen.

Key Points

• Plant nutrients in the soil

• Soil is a major source of nutrients needed by plants for growth. The three main nutrients are nitrogen (N), phosphorus (P), and potassium (K). Together they make up the trio known as NPK.

• Other important nutrients are calcium, magnesium, and sulfur. Plants also need small quantities of iron, manganese, zinc, copper, boron, and molybdenum, known as trace elements because only traces are needed by the plant.

• Major elements

• Nitrogen (N)

• Nitrogen is a key element in plant growth. It is found in all plant cells, in plant proteins and hormones, and chlorophyll.

• Atmospheric nitrogen is a source of soil nitrogen. Some plants such as legumes fix atmospheric nitrogen in their roots otherwise, fertilizer factories use nitrogen from the air to make ammonium sulfate, ammonium nitrate, and urea. When applied to the soil, nitrogen is converted to mineral form, nitrate, so that plants can take it up.

• Soils high in organic matter such as chocolate soils are generally higher in nitrogen than podzolic soils. Nitrate is easily leached out of the soil by heavy rain, resulting in soil acidification. We need to apply nitrogen in small amounts often so that plants use all of it, or inorganic form such as composted manure, so that leaching is reduced.

• Phosphorus (P)

• Phosphorus helps transfer energy from sunlight to plants, stimulates early root and plant growth, and hastens maturity.

• Very few Australian soils have enough phosphorus for sustained crop and pasture production and the North Coast is no exception. The most common phosphorus source on the North Coast is superphosphate, made from rock phosphate and sulfuric acid. All manures contain phosphorus manure from grain-fed animals is a particularly rich source.

• Potassium (K)

• Potassium increases the vigour and disease resistance of plants, helps form and move starches, sugars, and oils in plants, and can improve fruit quality.

• Potassium is low or deficient on many of the sandier soils of the North Coast. Also, heavy potassium removal can occur on soils used for intensive grazing and intensive horticultural crops (such as bananas and custard apples).

• Muriate of potash and sulfate of potash are the most common sources of potassium.

• Calcium (Ca)

• Calcium is essential for root health, the growth of new roots and root hairs, and the development of leaves. It is generally in short supply in the North Coast's acid soils. Lime, gypsum, dolomite, and superphosphate (a mixture of calcium phosphate and calcium sulfate) all supply calcium. Lime is the cheapest and most suitable option for the North Coast dolomite is useful for magnesium and calcium deficiencies, but if used over a long period will unbalance the calcium/magnesium ratio. Superphosphate is useful

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where calcium and phosphorus are needed.

• Magnesium (Mg)

• Magnesium is a key component of chlorophyll, the green colouring material of plants, and is vital for photosynthesis (the conversion of the sun's energy to food for the plant). Deficiencies occur mainly on sandy acidic soils in high rainfall areas, especially if used for intensive horticulture or dairying. Heavy applications of potassium in fertilizers can also produce magnesium deficiency, so banana growers need to watch magnesium levels because bananas are big potassium users.

• Magnesium deficiency can be overcome with dolomite (a mixed magnesium-calcium carbonate), magnesite (magnesium oxide), or Epsom salts (magnesium sulfate).

• Sulfur (S)

• Sulfur is a constituent of amino acids in plant proteins and is involved in energy-producing processes in plants. It is responsible for many flavours and odour compounds in plants such as the aroma of onions and cabbage.

• Sulfur deficiency is not a problem in soils high in organic matter, but it leaches easily. On the North Coast, seaspray is a major source of atmospheric sulfur. Superphosphate, gypsum, elemental sulfur, and sulfate of ammonia are the main fertilizer sources.

Q28. Answer: (c) Mercury

The correct answer is Mercury.

Key Points

• Mercury thermometers are used to provide accurate temperature readings. It used to measure the temperature under the arm, orally and rectally.

• Mercury is a poisonous liquid that can cause health hazards.

• Thermometer is the universal instrument used to measure temperature.

Additional Information

• Uses of Mercury:

1. Mercury can be used to make thermometers, barometers, and other scientific instruments.
2. Mercury conducts electricity and is used to make silent, position-dependent switches.
3. Mercury vapor is used in streetlights, fluorescent lamps, and advertising signs.

• Amalgam is an alloy in which one of the component metals is Mercury.

• Uses of Amalgam:

• Amalgams are used to make dental fillings, to bind to precious metals so they can be isolated later, and to produce mirror coatings.

Q29. Answer: (b) Copper

The correct answer is Copper.

Key Points

• Electrical wire is made of materials like copper, aluminium and silver. As silver is expensive, mostly copper and aluminium are used in wiring.

• Copper:

• It is a good conductor of electricity.

• It is used in wiring materials in cables.

• It has low resistance and is used for the conduction of electricity at high, medium and low voltage.

• Aluminium:

• It is lightweight and cheaper in comparison to copper. Therefore, this type of conducting material is mostly used in electrical wiring

• It is silvery-white in colour and it has a soft texture. It is often used in wiring and making the cable.

Q30. Answer: (c) H

The correct answer is H.

Key Points

• Hydrogen (H) is a colourless, odourless, nonmetallic, tasteless, highly flammable gas. It is the lightest gas in the periodic table having atomic number 1.

• Hydrogen was discovered by Henry Cavendish.

• Hydrogen gas is called the fuel of the future.

• The most abundant element in the universe is Hydrogen.

• The most abundant element on earth's crust is Oxygen.

• Hydrogen is the 'lightest element' in the periodic table.

Additional Information

• Lithium is the 'lightest metal' in the periodic table.

• Carbon Dioxide:

• It is a colourless gas with a density of about 53% higher than that of dry air.

• Its molecules consist of a carbon atom covalently double bonded to two oxygen atoms.

• Oxygen:

• It is the chemical element with the symbol O and atomic number 8.

• It is a member of the chalcogen group in the periodic table, a highly reactive nonmetal, and an oxidizing agent that readily forms oxides with most elements as well as with other compounds.

Q31. Answer: (a) 14 mtr

CONCEPT:

Formula Used:

• Circumference of the circle,

$P = 2\pi r$ ...(1)

Here r = radius of the circle

Calculation:

Given: P = 88 meters

• Using equation 1,

$\Rightarrow 88 = 2 \times (22/7) \times r$

$\Rightarrow r = 14$ meter

Therefore The radius of the circle is 14 meters.

So, the correct answer is option 1.

Q32. Answer: (d) 44944

CONCEPT

• Formula used:

$(a + b)^2 = a^2 + b^2 + 2ab$ ...(1)

CALCULATION:

Given: (212)2

• Using equation number 1,

$(212)^2 = (200 + 12)^2$

$\Rightarrow (200 + 12)^2 = (200)^2 + (12)^2 + 2??200?12$

$\Rightarrow 40000 + 144 + 4800$

$\Rightarrow 44944$

Therefore The value of $(212)^2$is 44944.

So, the correct answer is option 4.

Q33. Answer: (a) 36

CONCEPT:

• Here, we have to observe the pattern for the given series.

CALCULATION:

Given: 4, 9, 16, 25, __

• The difference between 2^(nd) and 1^(st) term = 9 - 4 = 5

• The difference between 3^(rd) and 2^(nd) term = 16 - 9 = 7

• The difference between 4^(th) and 3^(rd)term = 25 - 16 = 9

• We can say the the next term = 25 + 11 = 36

Therefore The next term is 36

So, the correct answer is option 1.

Q34. Answer: (c) 04

CONCEPT:

We know that,

(x^a)^b = x^(ab) ...(1)

CALCULATION

Given: ((64)^(2/3))^(1/2)

• Using equation number 1,

=> (64)^(2/3× 1/2)

=> (64)¹/3

=> (4)^(3 × 1/3)

=> 4

Therefore The value of ((64)^(2/3))^(1/2) is 4.

So, the correct answer is option 3.

Q35. Answer: (a) Rs. 1500

CONCEPT:

The monthly General Provident Fund contribution,

PF = Total pay - Total Pay after deduction ...(1)

CALCULATION:

Given:

• Net pay in a month after deduction = Rs. 13500

• He pays in general provident fund = 10% of total

• Let total fund(x) = 100%

• He pays 10% in the general provident fund

=> Remaining fund = 100% - 10% = 90%

=> 90% x = 13500

=> x = (13500 × 100) / 90

=> x = 15000

• Using equation number 1,

=> PF = 15000 - 13500

=> PF = 1500

Therefore The monthly General Provident Fund contribution is Rs. 1500.

So, the correct answer is option 1.

Q36. Answer: (c) Rs. 22,200

Given:

Cost of 950 kg mangoes = Rs. 38,000

Concept Used:

Cost of a item = Rs. b

Then cost of 1 item = Rs. (b/a)

=> The cost of c item = Rs. (b/a) × c

Calculation:

The cost of 950 kg mangoes = Rs. 38,000

=>The cost of 1 mangoes = Rs. (38000/950) = Rs. 40

=> The cost of 555 kgs mangoes = 40 × 555 = 22,200

Therefore The cost of 555 kgs mangoes is Rs. 22,200.

Q37. Answer: (b) 1356.0725

Concept Used:

Using BODMAS rule

Calculation:

145% of 700.05 + 22.00 × 15.5 = ?

= (145/100) × 700.05 + 341 = ?

= 1.45 × 700.05 + 341 =?

= 1015.0725 + 341 = ?

= 1356.0725

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Therefore The value of ? is 1356.0725.

Q38. Answer: (a) 30

Given:

10, 20, 30, 40, 50

Formula Used:

Average = Sum of total number/total number

Calculation:

Average = (10 + 20 + 30 + 40 + 50)/5

=> Average = 150/5

=> Average = 30

Therefore The average is 30.

Alternate MethodCONCEPT:

• Since the given series is in Arithmetic progression.

• The difference between two consecutive terms is 10.

• So, the common difference of 10,

=> Average = Average of first and the last term

CALCULATION:

Given: 10, 20, 30, 40, 50

The common difference of an A.P.,

=> d = 20 - 10 = 10

=> Average = (10 + 50)/2 = 30

Therefore The average is 30.

Q39. Answer: (b) Rs. 1200

Given:

S.I. = 180

Rate of interest = 5%

Time period = 3 year

Formula Used:

S.I = (P. R.T)/100

Here P = Principal amount, R = Rate of interest, T = Time period and S.I. = simple interest

Calculation:

=> 180 = (P × 3 × 5)/100

=> P = 1200

Therefore The principal amount is Rs. 1200.

Q40. Answer: (a) 795.45 cm²

Given:

Length of wire (Circumference of the circle) = 1 meter

Formula used:

Circumference of circle = 2πr

Area of the circle = πr²

Calculation:

Circumference of the circle = 1

=> 2πr = 1

=> r = (1/2π) meter

Area of the circle = πr²

=> π(1/2π)²

=> 1/4π mtr²

=> (10000 × 7)/(22 × 4) (Because 1 mtr = 10 cm)

=> 795.45 cm²

Therefore Area is 795.45 cm²

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Q41. Answer: (c) 16

Calculation:

3 : 8 = 6 : x

=> 3/8 = 6/x

We can use the cross multiplication,

=> 3x = 48

=> x = 16

Therefore The value of x is 16.

Q42. Answer: (b) 0.4

Given:

45% of 640 + 64% of 450 = ? of 1440

Concept Used:

Using BODMAS rule

Calculation:

45% of 640 + 64% of 450 = ? of 1440

= (45/100) × 640 + (64/100) × 450 = ? × 1440

= 288 + 288 = ? ×1440

= 576 = ? × 1440

= ? = 576/1440 = 0.4

Therefore The value of ? is 0.4

Q43. Answer: (d) 88

Given:

r + s = -8 and rs = -12

Formula Used:

$(a + b)^2 = a^2 + b^2 + 2ab$

Calculation:

$(r + s)^2 = r^2 + s^2 + 2rs$

$= (- 8)^2 = r^2 + s^2 + 2(-12)$

$= 64 = r^2 + s^2 - 24$

$= r^2 + s^2 = 64 + 24 = 88$

Therefore The value of $r^2 + s^2$ is 88.

Q44. Answer: (a) 315

Given:

The product of two numbers = 4725

HCF of two number = 15

Formula Used:

Product of two number (a × b) = L.C.M. of two number(a, b) × H.C.F. of two number(a, b)

Calculation:

4725 = 15 × L.C.M.

=> L.C.M. = 4725/15

=> L.C.M. = 315

Therefore The L.C.M. of these number is 315.

Q45. Answer: (c) 56.25 km

Given:

Speed of train = 75 km/hr

Time travel = 45 minutes

Formula Used:

Distance = speed × times

Calculation:

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Distance = 75 km/hr × 45 minutes
=> 75 km/hr × (45/60) hr
=> 225/4 km
=> 56.25 km
Therefore 56.25 kms will travel in 45 minutes.

Q46. Answer: (b) SPETS

The logic follows here is:
Letters are arranged in the reverse order.
Similarly,
Hence, the correct answer is "SPETS".

Q47. Answer: (b) I

The logic follows here is :
The positional value of the letters is getting decreased by 3.
Hence, the next term would be "I".

Q48. Answer: (b) Grandmother

Family Chart:
According to the given information:
(I) P is the mother of K
(II) K is the sister of D
(III) D is the father of J
After combining all the statements,
Family Tree:-
The gender of J is unknown.
Thus, P is the Grandmother of J.
Hence, the correct answer is "Grandmother".
We should not assume the gender of a member just by name.
Here, in this question, the Gender of J is unknown.

Q49. Answer: (c) VE

The logic follows here is:
First letter is decreasing by 1 and the second letter is increasing by 1.
Pair of letters is positional opposite.
Hence, the correct answer is "VE".
Positional opposite (Reverse) letters have a sum of their Positional values as 27.
For example, C and X are reverse alphabets.
C (3) + X (24) = 27.

Q50. Answer: (a) 20

According to the given information:
Position of the tree from the left side = 7th
Position of the tree from the right side = 14th
Total trees = (Position from the left) + (Position from the right) - 1
Total trees = 7 + 14 - 1 = 20
Hence, the correct answer is "20".
1 is subtracted because the given tree is counted twice when counted from both left and right.
Total number of trees = 6 (right side) + 1 (Given Tree) + 13 (Left side)
Total trees = 20.

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