SSC CHSL 2025 Tier-1 (Held On: 26 Nov, 2025 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2025 • 100 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/ssc-chsl/ssc-chsl-2025-tier-1-held-on-26-nov-2025-shift-1-previous-year…

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

1 question is in Hindi and not printed here. Each one links to the online version, where you can read it.

ENGLISH LANGUAGE

Q1. Identify the part of the sentence that contains a grammatical error.

"They decided to B. split the winnings C. between the four D. members of the group."

(a) They decided to
(b) split the winnings
(c) between the four
(d) members of the group

Q2. Identify the part of the sentence that contains a grammatical error.

"A. The new smartphone is B. much more sleeker C. and lighter than D. the previous model."

(a) The new smartphone is
(b) much more sleeker
(c) and lighter than
(d) the previous model.

Q3. Fill in the blank with the most appropriate conjunction:

He will be promoted _____ he improves his communication and leadership skills.

(a) unless
(b) although
(c) provided that
(d) whereas

Q4. Select the most appropriate synonym of the word: Rancor

(a) Amity
(b) Goodwill
(c) Animosity
(d) Harmony

Q5. Select the most appropriate synonym of the word: ESCHEW

(a) Accept
(b) Embrace
(c) Avoid
(d) Pursue

Q6. Choose the correctly spelt word:

(a) Parliment
(b) Pailament
(c) Parliament
(d) Parlaiment

Q7. Choose the correct one-word substitute for:

A statement that is obviously true and needs no proof.

(a) Maxim
(b) Axiom
(c) Proverb
(d) Epigram

Q8. Select the most appropriate antonym of the word: Erudite

(a) Ignorant
(b) Intellectual
(c) Wise
(d) Scholarly

Q9. Choose the correct indirect narration of the following statement from the given alternatives:

The children said, "Teacher! Please show us what is inside the box."

(a) The children requested the teacher to show them what was inside the box.
(b) The children urged the teacher to show us what was inside the box.
(c) The children requested the teacher to show them what has been inside the box.
(d) The children requested the teacher please show them what was inside the box.

Q10. Select the most appropriate antonym of the word: Dearth

(a) Scarcity
(b) Abundance
(c) Lack
(d) Shortage

Q11. Choose the correct spelling to complete the sentence:

"He lost his most valuable _____ during the move."

(a) posession
(b) possesion
(c) possession
(d) posesssion

Q12. Change the following sentence into the Active form.

Let the agreement’s terms be fully understood by all parties before signing.

(a) All parties fully understand the agreement's terms before signing.
(b) All parties must fully understand the agreement's terms before signing.
(c) Fully understand the agreement's terms before signing.
(d) Let all parties fully understand the agreement's terms before signing.

Q13. Choose the most suitable option to replace the highlighted part of the sentence:

Five kilometres are the distance between my house and the airport.

(a) Five kilometres were the distance
(b) Five kilometres is the distance
(c) Five kilometre is to be the distance
(d) Five kilometres are distances

Q14. Choose the correct passive voice transformation of the sentence:

The government has announced a new policy.

(a) A new policy has been announced by the government.
(b) A new policy was announced by the government.
(c) A new policy had been announced by the government.
(d) A new policy is being announced by the government.

YourMockTest.com — Free Study Material

Q15. Select the option that expresses the given sentence in direct voice.

My friend told me that she could not come.

(a) My friend said to me, "She could not come."
(b) My friend said to me, "I can not come."
(c) My friend said to me, "I could not come."
(d) My friend said to me, "I might not come."

Directions

Read the passage and answer the following questions:

In India’s fiscal architecture, taxation constitutes a cardinal instrument for resource mobilisation and equitable wealth distribution. Broadly bifurcated into direct and indirect levies, the system encompasses a complex interplay of statutory provisions, administrative machinery, and compliance frameworks.

Direct taxes, exemplified by income tax and corporate tax, are levied directly on individuals or entities based on their earnings or profits. These imposts embody the principle of progressive taxation, wherein higher income brackets attract proportionately higher rates, ostensibly promoting distributive justice.

Indirect taxes, conversely, are imposed on goods and services, with the burden ultimately borne by the end consumer. The advent of the Goods and Services Tax (GST) in 2017 subsumed a plethora of erstwhile levies such as excise duty, service tax, and value-added tax, creating a unified national market. While GST has streamlined compliance and reduced cascading effects, debates persist regarding its impact on small enterprises and revenue buoyancy.

In addition, India imposes ancillary duties such as customs duty on imports, intended both to generate revenue and to protect domestic industries. The overall tax regime, though intricate, is pivotal for financing public infrastructure, social welfare programmes, and defence expenditure, thereby underpinning the nation’s developmental trajectory.

Q16. The clause "wherein higher income brackets attract proportionately higher rates" is:

(a) Adverbial clause of cause
(b) Adjective clause
(c) Noun clause
(d) Adverbial clause of place

Q17. Rewrite the following sentence by converting it to Interrogative Negative sentence:

"India imposes ancillary duties such as customs duty on imports, intended both to generate revenue and to protect domestic industries."

(a) Does India impose ancillary duties, such as customs duty, on imports with the intention of both generating revenue and protecting domestic industries?
(b) Why India impose ancillary duties, such as customs duty, on imports with the intention of both generating revenue and protecting domestic industries?
(c) Doesn't India impose ancillary duties, such as customs duty, on imports with the intention of both generating revenue and protecting domestic industries?
(d) Did India impose ancillary duties, such as customs duty, on imports with the intention of both generating revenue and protecting domestic industries?

Q18. The word "ostensibly" most nearly means:

(a) Secretly
(b) Supposedly or apparently
(c) Certainly
(d) Permanently

Q19. The word "subsume" means:

(a) To absorb or include
(b) To reject
(c) To separate
(d) To delay

YourMockTest.com – Free Study Material

Q20. According to the passage, what was the primary structural change introduced by GST?

(a) It reduced income tax rates
(b) It created a single tax replacing many indirect taxes
(c) It eliminated customs duties
(d) It increased corporate tax rates

Q21. Rearrange the following sentence parts to form a meaningful and grammatically correct paragraph:

P. A hiss of air and a flat tire ended his road trip suddenly.
Q. He raised the car, his wrench already loosening lug nuts with a squeak.
R. With a grunt, he replaced the worn tire with the tiny spare, a stopgap measure.
S. A few minutes later, the vehicle was back on the road, ready to proceed.

(a) P,Q,R,S
(b) S,P,R,Q
(c) S,Q,P,R
(d) Q,R,P,S

Q22. Rearrange the following sentence parts to form a meaningful and grammatically correct paragraph:

P. He crafted his thoughts into a careful message, his fingers flying across the keys.
Q. He swiftly entered a lengthy string of characters and numbers that was the recipient's email address.
R. A simple subject line summarizes the entire point of the message.
S. He breathed a last sigh of relief as he hit the send button and saw the email disappear.

(a) Q,R,P,S
(b) P,Q,S,R
(c) S,Q,P,R
(d) Q,S,R,P

Q23. Rearrange the following sentences to form a meaningful and grammatically correct paragraph:

P. She gracefully finished with her arms up after landing flawlessly on both feet.
Q. She flipped and twisted her body in midair as she blasted herself off the springboard.
R. She ran briskly in the direction of the vault to start her routine.
S. With a faultless performance and a perfect score, she bowed to the judges and the audience.

(a) R, S, P, Q
(b) R, Q, P, S
(c) S, Q, P, R
(d) Q, R, P, S

Q24. Which of the following pairs of homophones can be used to fill in the blanks most suitably?

"His years of effort came to _____ when the invention was rejected, but he reminded himself that failure does _____ define a person."

(a) naught, nought
(b) not, naught
(c) naught, not
(d) not, nought

Q25. Which of the following words refers to the misuse or violation of something that is considered sacred?

(a) Defamation
(b) Desecration
(c) Forgery
(d) Insubordination

GENERAL INTELLIGENCE

Q26. Karan said, "She is the only daughter of my son's wife's father." How is 'she' related to Karan?

(a) Daughter-in-law
(b) Granddaughter
(c) Sister-in-law
(d) Daughter

Q27. Rahul said, "The woman is the mother of the husband of the only daughter of my wife's mother." How is the woman related to Rahul?

(a) Mother
(b) Mother-in-law
(c) Sister-in-law
(d) Co-mother-in-law

Q28. In a secret message system, each vowel in a word is replaced with the letter that comes two places after it in the alphabet, while each consonant is replaced with the one that comes just before it. After applying this logic to the word COMBINATION, what will be the final coded form?

(a) BNCOKLCVRMQ
(b) BNPEKLDVRMQ
(c) BNCOKLCVRMN
(d) BQLAKMCSKQM

Q29. Your business partner is upset because you made a decision without consulting them. How to repair trust?

(a) Ignore their feelings and proceed
(b) Blame external pressure
(c) Apologize, explain reasoning, and involve them in future decisions
(d) Fire them

Q30. Read the following statement carefully and identify the conclusion that follows.

Statement:

No tree is a plant.

Some plants are flowers.

Conclusions:

I. Some flowers are not trees.

II. No flower is a tree

(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Either conclusion I or II follows.
(d) Neither conclusion I nor II follows.

Q31. Read the following statement carefully and identify the conclusion that follows.

Statement:

No chair is a stool.

All stools are wooden.

Conclusions:

I. No chair is wooden.

II. Some wooden are not chairs.

(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Either conclusion I or II follows.
(d) Neither conclusion I nor II follows.

YourMockTest.com — Free Study Material

Q32. There are 26 students in a classroom arranged in a row. Deepa is 4th from the left and Seema is 16th from the right. Find the number of students between Deepa and Seema.

(a) 5
(b) 6
(c) 7
(d) 8

Q33. Rs. 900 is to be divided among A, B, and C in the ratio 2:3:4. How much will B receive?

(a) Rs. 200
(b) Rs. 300
(c) Rs. 400
(d) Rs. 450

Q34. In the following questions some issues are provided to you. You have to mark the appropriate answer logically that can be taken in such circumstances.

You made a mistake that cost your team a client. What's the emotionally intelligent response?

(a) Blame others to protect your job
(b) Admit your mistake and discuss how to improve
(c) Ignore the issue and move on
(d) Over-apologize to everyone involved

Q35. In this question some of the words sequence is given which follows some logical pattern of word find the next word that can be logically replace the ? In each sequence.

Sensation, Perception, Cognition, ?

(a) Emotion
(b) Consciousness
(c) Memory
(d) Metacognition

Q36. Your business partner consistently interrupts you during meetings, making you feel undervalued. The best social intelligence response?

(a) Interrupt back aggressively to assert dominance
(b) Start your own separate business secretly
(c) After the meeting, calmly discuss how the interruptions affect collaboration and suggest turn-taking
(d) Stop sharing ideas altogether

Q37. Find out the wrong number in the following series: 998, 727, 510, 351, 214, 123, 62

(a) 727
(b) 510
(c) 351
(d) 123

Q38. Pick the Odd one out from the given alternatives-

(a) Hive-Web- Spider
(b) Cave-Shed-Kennel
(c) Hole - Igloo- Cottage
(d) Aquarium – Anthill – Kennel

Q39. Choose the set where the pattern of vowels and consonants differs.

(a) LAMP
(b) DUST
(c) GRIN
(d) MOON

YourMockTest.com — Free Study Material

Q40. A person returns a lost wallet containing cash but takes a Rs. 100 note. What is the most logical judgement?

(a) They are a thief
(b) They are honest
(c) They showed partial honesty
(d) They deserve a reward

Q41. A CEO discovers their close friend in the company has leaked data. There is solid evidence. What is the most principled decision?

(a) Ignore for friendship's sake
(b) Fire the friend privately
(c) Take transparent disciplinary action
(d) Transfer the friend to another department

Q42. Directions: Choose the related word from the given alternatives.

Race : ? :: Athletics : Stadium

(a) Track
(b) Ring
(c) Court
(d) Field

Q43. A certain number of persons are standing in a row facing south (not necessarily in the same order). A is 13th person from left end. Four people stand between A and Z. Z is second person from one of the end. How many persons are standing in the row?

(a) 16
(b) 18
(c) 19
(d) 13

Q44. Some conditional data is provided to you in form of statement you have to check which of the following statement are logically inference from given statement.

Statement: The store manager noticed that sales of umbrellas increased by 300% over the past three days, while sales of sunscreen and beach items dropped significantly. What can you reasonably infer?

(a) The store is having a special promotion on umbrellas
(b) There has been unexpected rainy weather
(c) Beach season is ending
(d) Customers prefer umbrellas to beach items

Q45. Some conditional data is provided to you in form of statement you have to check which of the following statement are logically inference from given statement.

Statement: A psychological study reports: "Participants who received positive feedback showed increased cortisol levels, elevated heart rate, and decreased performance on subsequent tasks, contrary to our hypothesis." The researchers noted that the feedback was given publicly in front of peers. What complex inference can you draw?

(a) Positive feedback is always harmful to performance
(b) The public nature of the praise created performance anxiety that outweighed its benefits
(c) The study's methodology was flawed
(d) Participants were lying about their emotional responses

Q46. A and R started walking from a same point. A walks 32 km towards north. R walks 28 km towards south. A turns right and walks 32 km. How far (in km) and in which direction is A now from the R?

(a) 68, South-west
(b) 64, South-west
(c) 64, North-west
(d) 68, North-east

YourMockTest.com — Free Study Material

Q47. Three out of the following four are alike in a particular pattern and hence form a group. Find the one which does not belong to that group.

Whisper, Murmur, Shout, Mumble

(a) Whisper
(b) Murmur
(c) Shout
(d) Mumble

Q48. Select the option that is related to the fourth number in the same way as the first number is related to the second number and fifth number is related to sixth number.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

868 : 5204 :: ? : 14 :: 643 : 3854

(a) 9
(b) 4
(c) 3
(d) 6

Q49. Few of the letters are given followed by a question mark (?) these letters are following a specific pattern you have to give the correct option which can replace question mark.

Which letter comes next in the series: A, E, J, P, ?

(a) W
(b) V
(c) U
(d) X

Q50. In a certain coded language 'COMPS' is coded as 'NKHKY' and 'ABATE' is coded as 'ZOVXW'. How will 'SMOKY' be coded in the same code language?

(a) RHKJN
(b) TGKIQ
(c) SFIKQ
(d) TFJIO

QUANTITATIVE APTITUDE

Q51. A factory hired 9 workers and found that their average productivity per day was 42.75 units. Later, 3 more workers were hired. The average productivity of all 12 workers then became 45.5 units. However, one of the new 3 workers made 52.2 units daily, and another made 48.4 units daily. What is the daily productivity of the third new worker?

(a) 59.35
(b) 60.65
(c) 61.75
(d) 63.25

Q52. If sin(2x + 50)^? = cos(2y - 50)^?, such that 0^? < x + y < 90^?, then find the value of tan(x + y).

(a) √2
(b) 0
(c) 1
(d) 3√3

Q53. Alloy A contains metals x and y only in the ratio 3:2, while alloy B contains them in the ratio 5:6. Alloy C is prepared by mixing alloys A and B in the ratio 4:3. The percentage of x in alloy C is:

(a) 51%
(b) 55%

YourMockTest.com - Free Study Material

(c) 52%
(d) 53.77%

Q54. If AB is a chord of a circle with center O, and angle AOB = 60^?, then the length of the arc AB (radius = r) is:
(a) πr
(b) (πr) / 3
(c) (πr) / 6
(d) (πr) / 2

Q55. A train takes 36 seconds to pass a man walking at 2 m/s in the same direction and 48 seconds to cross a platform whose length is 50% more than the train. A 60-metre-long tractor is coming from the opposite direction at 6 m/s. Find the time taken by the train to completely cross the tractor. (in approx.)
(a) 18 seconds
(b) 14 seconds
(c) 15 seconds
(d) 19 seconds

Q56. A trader sells an article to A at 20% profit. A then sells to B at 10% loss. B sells to C at 5% profit. If C pays Rs. 1,134, what was the original cost price of the article (the trader's CP)?
(a) CP = Rs 500
(b) CP = Rs 1000
(c) CP = Rs 1500
(d) CP = Rs 2000

Q57. A sum of Rs. 2,400 doubles in 8 years under simple interest. Another sum Q is invested at the same rate. The interest earned on Q for 5 years exceeds the interest earned on Rs. 2,400 for 3 years by Rs. 300. What is Q?
(a) Rs. 1920
(b) Rs. 2160
(c) Rs. 1800
(d) Rs. 2000

Q58. Three partners P, Q, R invest in a business. Q's capital is three times R's capital and half of P's capital equals the capital of Q. If the total profit is Rs. 24,000, find P's share in the profit.
(a) Rs. 6000
(b) Rs. 81901
(c) Rs. 10000
(d) Rs. 14400

Q59. Rs. 1,200 is divided among A, B, and C such that A receives half as much as B, and B half as much as C. What is B's share?
(a) Rs. 456.89
(b) Rs. 342.86
(c) Rs. 300.89
(d) Rs. 490.89

Q60. A retailer sells a product for Rs. A, incurring a loss of 10%. During a sale, he marks up the product by 17.5% on the cost price and provides a flat discount of 20% on the marked price. What is the percentage profit or loss for the retailer during the sale?
(a) 6% loss
(b) 6% profit
(c) 4% loss
(d) 4% profit

YourMockTest.com — Free Study Material

Q61. A jar holds red and blue marbles in a ratio of 5:3. After removing 15 blue marbles, the ratio of red to blue marbles changes to 5:2. How many red marbles are there in the jar?

(a) 85
(b) 80
(c) 65
(d) 75

Q62. An amount of Rs. 8,000 is invested at 10% compound interest. What will be the amount after 3 years?

(a) Rs. 10,480
(b) Rs. 10,542
(c) Rs. 10,648
(d) Rs. 10,800

Q63. The savings of Arjun and Karan are in the ratio 7:9. If both save Rs. 3,000 more, the ratio changes to 10:12. What is Karan's saving?

(a) Rs. 9,000
(b) Rs. 12,000
(c) Rs. 15,000
(d) Rs. 18,000

Q64. Which of the following is the least number that is divisible by each of the numbers 16, 20, and 24 is:

(a) 1600
(b) 3600
(c) 6400
(d) 14400

Q65. A man travels 120 km at 40 km/h and returns the same distance at 60 km/h. What is his average speed for the whole journey?

(a) 48 km/h
(b) 49 km/h
(c) 50 km/h
(d) 52 km/h

Q66. Find the least number which when divided by 20, 25, 35, and 40 leaves remainders 14, 19, 29, and 34 respectively.

(a) 1394
(b) 1399
(c) 1405
(d) 1425

Q67. The average of 20 numbers is 45. If 50% of the numbers are increased by 4 each and the remaining 50% are decreased by 6 each, what is the new average of the numbers?

(a) 44
(b) 46
(c) 49
(d) 47

Q68. Two cars, one from City M and another from City N, which are 450 km apart, start moving towards each other. The first car travels at a speed of 50 km/h, and the second car travels at a speed of 40 km/h. If they start at the same time, how far from City M will they meet?

(a) 250 km
(b) 310 km
(c) 350 km
(d) 160 km

YourMockTest.com — Free Study Material

Q69. A and B can complete a work in 12 days, B and C can complete the same work in 15 days. A, B, and C together can complete the work in 10 days. How long will it take for A and C together to complete the work?

(a) 15 days
(b) 17 days
(c) 20 days
(d) 12 days

Q70. This question is in Hindi. Read it online.

Q71. A microwave oven has a marked price of Rs. 8,000. It sells for Rs. 6,200 during the sale season. What is the offered percentage discount?

(a) 22.5%
(b) 25.5%
(c) 34.5%
(d) 26.8%

Q72. The simple interest on a certain sum of money for 2 years at 6% per annum is Rs. 1,200. What is the sum of money?

(a) Rs. 16,000
(b) Rs. 12,000
(c) Rs. 14,000
(d) Rs. 10,000

Q73. If the sum of money amounts to Rs. 2000 at the end of 2 years and Rs. 2500 at the end of 5 years at simple interest, what is the rate of interest?

(a) 14%
(b) 20%
(c) 10%
(d) 15%

Q74. A vessel contains 60 litres of a milk-water mixture in the ratio 2 : 1. From this mixture, 10 litres are taken out and then replaced with 10 litres of pure water. After this operation, what will be the new ratio of milk to water in the vessel?

(a) 1:1
(b) 5:4
(c) 4:5
(d) 2:3

Q75. From an external point P to a circle, a tangent PT and a secant PQR are drawn such that PT=10 cm, PQ=5 cm, and QR=x cm. Given that point Q lies between points P and R, find the value of x such that the secant intersects the circle at points Q and R.

(a) 14 cm
(b) 15 cm
(c) 12.56 cm
(d) 14.23 cm

GENERAL AWARENESS

Q76. Which Delhi sultan was known for his "Market Reforms"?

(a) Balban
(b) Firoz Shah Tughlaq
(c) Alauddin Khalji
(d) Iltutmish

YourMockTest.com — Free Study Material

Q77. Which of the following features of the Indian Constitution is borrowed from Canada?

(a) Advisory Jurisdiction of the Supreme Court
(b) Rule of Law
(c) Impeachment of the President
(d) Fundamental duties

Q78. Which of the following is not covered under Article 25 of the Indian Constitution?

(a) Freedom of Conscience
(b) Right to profess and practice religion
(c) Right to propagate religion
(d) Right to religious conversion

Q79. The Asian Infrastructure Investment Bank is headquartered in _____.

(a) Beijing
(b) Shanghai
(c) New Delhi
(d) Bangkok

Q80. Agreement on cooperation in the peaceful uses of Nuclear energy was signed in _____ between India and Japan.

(a) 2008
(b) 2012
(c) 2016
(d) 2020

Q81. Hariprasad Chaurasia is a celebrated classical musician known for playing which instrument?

(a) Sitar
(b) Flute
(c) Violin
(d) Tabla

Q82. Which ministry has launched "Deen Dayal SPARSH Yojana" in August 2024?

(a) Ministry of Agriculture
(b) Ministry of Communications
(c) Ministry of Power
(d) Ministry of Defence

Q83. Who publishes the Global Terrorism Index 2024?

(a) SIPRI
(b) Institute for Economics and Peace
(c) United Nations
(d) WHO

Q84. Which organization publishes the Human Development Report?

(a) UNDP
(b) IMF
(c) World Bank
(d) World Economic Forum

Q85. State Health Index is an initiative of NITI Aayog, in collaboration with Ministry of Health and Family Welfare and with technical assistance from the _____.

(a) Institute for Competitiveness
(b) CSIR
(c) World Bank
(d) Ministry of Earth Sciences

YourMockTest.com — Free Study Material

Q86. Steeplechase is a hurdle race with water jumps came into existence in England around _____.

(a) 1850
(b) 1900
(c) 1710
(d) 1980

Q87. The Farakka barrage is situated on _____ river.

(a) Ganga
(b) Mahanadi
(c) Godavari
(d) Luni

Q88. Which city will host the 2032 Summer Olympics Games?

(a) Brisbane
(b) Doha
(c) Salt Lake City
(d) Nice

Q89. Which of the following is a purpose of remote sensing satellites?

I. Draught assessment
II. Estimation of yield of various crops

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Q90. The 'Mangalyaan' mission of India was launched by, which of the following launch vehicle?

(a) SLV-3
(b) ASLV
(c) PSLV
(d) GSLV

Q91. The "Chandrayaan-2" mission was launched by, which of the following launching vehicle?

(a) SLV-3 /
(b) ASLV
(c) GSLV
(d) PSLV

Q92. Which institute has developed hybrid aerogel to extract gold from e-waste in December 2024?

(a) IISER, Tirupati
(b) IISER, Mohali
(c) IISER, Pune
(d) IISER, Bhopal

Q93. Which space agency has launched the PUNCH Mission in March 2025?

(a) ESA
(b) NASA
(c) JAXA
(d) ISRO

Q94. Which of the following factors determine the state of a substance whether it will be solid, liquid or gas?

(a) Pressure and temperature
(b) Density and viscosity
(c) Pressure and density
(d) Temperature and weight

YourMockTest.com — Free Study Material

Q95. How many astronomical observatories were constructed by Sawai Jai Singh, the ruler of Amber?

(a) Five
(b) Nine
(c) Ten
(d) Twelve

Q96. What tragic incident happened in the life of Robert Clive in 1774?

(a) He was assassinated
(b) He committed suicide.
(c) He was exiled to Burma
(d) He was given death penalty on the charges of corruption

Q97. In the context of the Indian Parliament, the _____ Reading refers to the discussion on the motion that the Bill or the Bill, as amended, be passed.

(a) First
(b) Second
(c) Third
(d) Fourth

Q98. Which of the following enzyme is secreted by the pancreas for digesting emulsified fats in humans?

(a) Amylase
(b) Lipase
(c) Trypsin
(d) Lactase

Q99. Which of the following waste product is stored in old xylem of plants?

I. Resins
II. Gums

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Q100. In the context of the Sangam age of South India, the term "Sangam" refers to _____.

(a) a royal festival of Tamil kings
(b) a council of military leaders
(c) a gathering of South Indian traders
(d) an assembly or "meeting together" of Tamil poets

ANSWER KEY

1	c	2	b	3	c	4	c	5	c	6	c	7	b	8	a	9	a	10	b
11	c	12	d	13	b	14	a	15	b	16	b	17	c	18	b	19	a	20	b
21	a	22	a	23	b	24	c	25	b	26	a	27	a	28	d	29	c	30	a
31	b	32	b	33	b	34	b	35	d	36	c	37	c	38	a	39	d	40	c
41	c	42	a	43	c	44	b	45	b	46	d	47	c	48	c	49	a	50	d
51	b	52	c	53	d	54	b	55	b	56	b	57	a	58	d	59	b	60	a
61	d	62	c	63	a	64	b	65	a	66	a	67	a	68	a	69	c	70	b
71	a	72	d	73	c	74	b	75	b	76	c	77	a	78	d	79	a	80	c
81	b	82	b	83	b	84	a	85	a	86	c	87	a	88	a	89	c	90	c
91	c	92	c	93	b	94	a	95	a	96	b	97	c	98	b	99	c	100	d

YourMockTest.com — Free Study Material

SOLUTIONS

Q1. Answer: (c) between the four

The correct answer is Option 3.

Key Points

• The grammatical issue in the sentence is the incorrect use of the preposition "between."

• The preposition "between" is used when referring to two entities, while "among" is used for more than two.

• Since the sentence refers to "the four members of the group," the correct preposition to use is "among."

• Therefore, the phrase "between the four" should be corrected to "among the four."

Therefore, the correct answer is Option 3.

Correct Sentence: "They decided to split the winnings among the four members of the group."

Additional Information

• Option 1: "They decided to" – This part of the sentence is grammatically correct and does not require any changes.

• Option 2: "split the winnings" – This part of the sentence is also correct and does not require any changes.

• Option 4: "members of the group" – This part of the sentence is grammatically correct and does not require any changes.

Q2. Answer: (b) much more sleeker

The correct answer is Option 2.

Key Points

• The error in the sentence lies in the phrase "much more sleeker."

• The word "sleeker" is the comparative form of the adjective "sleek," and it should not be preceded by "much more."

• Using both "much more" and the comparative form "sleeker" together is redundant and grammatically incorrect.

• The correct phrase should simply be "much sleeker."

Therefore, the correct answer is Option 2.

Correct Sentence: "The new smartphone is much sleeker and lighter than the previous model."

Additional Information

• A: "The new smartphone is" – This part of the sentence is grammatically correct and does not require any changes.

• C: "and lighter than" – This part of the sentence is grammatically correct and does not require any changes.

• D: "the previous model." – This part of the sentence is grammatically correct and does not require any changes.

Q3. Answer: (c) provided that

The correct answer is '3' i.e. provided that.

Key Points

• The conjunction "provided that" is used to indicate a condition that must be met for a certain outcome to occur.

• The sentence mentions a condition for promotion, making "provided that" the most appropriate choice.

• "Unless" (Option 1) is incorrect as it implies a negative condition, which does not fit the context here.

• "Although" (Option 2) is incorrect as it is used to indicate contrast, not a condition.

• "Whereas" (Option 4) is incorrect as it is used to show contrast between two clauses, not a condition.

Therefore, the correct answer is Option 3.

Complete Sentence: "He will be promoted provided that he improves his communication and leadership skills."

Additional Information

• Option 1: "Unless" is used for negative conditions, e.g., "You will fail unless you study."

• Option 2: "Although" is used to indicate contrast, e.g., "Although it was raining, they went outside."

• Option 4: "Whereas" is used to compare two contrasting ideas, e.g., "He enjoys swimming, whereas she prefers running."

Q4. Answer: (c) Animosity

The solution is in Hindi. Read it online.

Q5. Answer: (c) Avoid

The solution is in Hindi. Read it online.

YourMockTest.com — Free Study Material

Q6. Answer: (c) Parliament

The correct answer is option 3, i.e., Parliament.

Key Points

• The correctly spelled word is 'Parliament'.

• Parliament refers to the supreme legislative body in a country, especially in countries that follow the parliamentary system of governance.

• The other options are incorrectly spelled variations of the word.

Correct sentence usage:

• The Parliament will convene next week to discuss the new policy reforms.

Additional Information

• Parliment: Incorrect spelling of 'Parliament'.

• Pailament: Incorrect spelling of 'Parliament'.

• Parlaiment: Incorrect spelling of 'Parliament'.

• Parliament: The accurate spelling and correct answer.

Q7. Answer: (b) Axiom

The solution is in Hindi. Read it online.

Q8. Answer: (a) Ignorant

The solution is in Hindi. Read it online.

Q9. Answer: (a) The children requested the teacher to show them what was inside the box.

The correct answer is Option 1.

Key Points

• Indirect Speech Conversion: The process of converting direct speech to indirect speech involves changes in pronouns, verb tenses, and sentence structure while maintaining the original meaning.

• Key Conversions:

• Pronoun "us" becomes "them": In indirect speech, the pronoun changes to match the perspective of the reporting speaker.

• Verb tense change: "is" (present tense) changes to "was" (past tense) to align with the rules of reported speech.

• Request structure: The direct request "Please show us" is converted to "requested the teacher to show them" to appropriately convey the polite request in indirect speech.

• Punctuation and Format:

• The quotation marks and direct speech format are removed in indirect speech.

• The reporting verb "requested" is followed by the infinitive form "to show" for a polite request.

Therefore, the correct answer is Option 1.

Correct Sentence: The children requested the teacher to show them what was inside the box.

Additional Information

• Option 2: The children urged the teacher to show us what was inside the box.

• Incorrect pronoun "us" instead of "them" for indirect speech.

• The word "urged" is inappropriate as it suggests forcefulness, whereas the tone of the sentence is a polite request.

• Option 3: The children requested the teacher to show them what has been inside the box.

• Incorrect verb tense: "has been" (present perfect) does not match the past tense "was" required in indirect speech.

• Option 4: The children requested the teacher please show them what was inside the box.

• Incorrect structure: "please show" retains direct speech format, which is not used in indirect speech.

Q10. Answer: (b) Abundance

The solution is in Hindi. Read it online.

Q11. Answer: (c) possession

The solution is in Hindi. Read it online.

Q12. Answer: (d) Let all parties fully understand the agreement's terms before signing.

The correct answer is Option 4.

Key Points

• The given sentence is in the passive voice.

YourMockTest.com – Free Study Material

• To convert a sentence from passive to active voice, identify the subject performing the action and make it the subject of the sentence.

• The passive sentence is: "Let the agreement's terms be fully understood by all parties before signing."

• In the active voice, the subject "all parties" is placed at the beginning, followed by the verb "fully understand" and the object "the agreement's terms."

• The imperative form "Let" is retained in Option 4, which matches the structure of the original sentence while making it active.

Therefore, the correct answer is Option 4.

Correct Sentence: "Let all parties fully understand the agreement's terms before signing."

Additional Information

• Option 1: "All parties fully understand the agreement's terms before signing." – This is not imperative and does not match the original sentence's intent.

• Option 2: "All parties must fully understand the agreement's terms before signing." – Adds the modal "must," which alters the meaning of the original sentence.

• Option 3: "Fully understand the agreement's terms before signing." – Omits the subject "all parties," making it incomplete.

Q13. Answer: (b) Five kilometres is the distance

The correct answer is '2' i.e. 'Five kilometres is the distance'.

Key Points

• In English grammar, measurements, distances, and quantities are usually treated as singular subjects, even if they appear in plural form (e.g., five kilometres).

• The verb "is" is the correct singular form to agree with the subject "Five kilometres" in this context.

• Option 1 and Option 4 are incorrect because the plural verb "are" is not grammatically correct for this usage.

• Option 3 is incorrect because "is to be the distance" is not a natural or standard construction in English.

Therefore, the correct answer is Option 2.

Complete Sentence: "Five kilometres is the distance between my house and the airport."

Additional Information

• Option 1: "Five kilometres were the distance" is incorrect because the use of "were" implies a past tense plural subject, which is not suitable here.

• Option 3: "Five kilometre is to be the distance" is incorrect because "kilometre" is singular and does not match the plural subject "Five kilometres."

• Option 4: "Five kilometres are distances" is incorrect as it changes the meaning, referring to multiple distances instead of a single measurement.

Q14. Answer: (a) A new policy has been announced by the government.

The correct answer is Option 1.

Key Points

• Passive voice structure: The object of the active voice sentence becomes the subject of the passive voice sentence.

• In the active voice, the sentence is: "The government has announced a new policy."

• To convert to passive voice: Place the object "a new policy" at the beginning.

• Change the active verb form "has announced" to "has been announced" (present perfect passive).

• Add the preposition "by" followed by the original subject "the government."

Therefore, the correct answer is Option 1.

Correct Sentence: "A new policy has been announced by the government."

Additional Information

• Option 2: "A new policy was announced by the government." – Incorrect tense (past simple passive instead of present perfect passive).

• Option 3: "A new policy had been announced by the government." – Incorrect tense (past perfect passive).

• Option 4: "A new policy is being announced by the government." – Incorrect tense (present continuous passive).

Q15. Answer: (b) My friend said to me, "I can not come."

The correct answer is Option 2.

Key Points

• Indirect Speech: My friend told me that she could not come.

• Key Conversions:

• "She could not come" becomes "I can not come" in direct speech:

• The pronoun "she" is converted to "I" because the speaker (my friend) is referring to herself in direct speech.

• The modal verb "could" in indirect speech is the back-shifted form of "can"; therefore, the direct speech uses "can" when the reporting verb is in the past tense.

• Reporting Verb:

• The indirect reporting verb "told" is converted to "said to" in direct speech.

• The preposition "to me" is retained to indicate the listener.

• Punctuation and Format:

• Direct speech is enclosed in quotation marks.

• The sentence starts with a capital letter "I" and ends with a full stop inside the quotation marks.

Therefore, the correct answer is Option 2.

Correct Sentence: "My friend said to me, 'I can not come.'"

Additional Information

• Option 1: "My friend said to me, 'She could not come.'"

• Incorrect because the pronoun "she" in direct speech does not align with the speaker (my friend).

• Option 3: "My friend said to me, 'I could not come.'"

• Incorrect because "could" remains "could" in indirect speech only if it was already "could" or "can" is being back-shifted; however, to form the indirect "could", the direct form typically uses "can" to denote ability.

• Option 4: "My friend said to me, 'I might not come.'"

• Incorrect because "might not" implies possibility, whereas "could not" conveys inability.

Q16. Answer: (b) Adjective clause

The correct answer is 'Option 2'.

Key Points

• Defining an Adjective Clause.

• An Adjective Clause (also known as a relative clause) is a dependent clause that modifies a noun or pronoun. It typically starts with relative pronouns like who, which, that or relative adverbs like where, when, wherein.

• In the sentence: "These imposts embody the principle of progressive taxation, wherein higher income brackets attract proportionately higher rates...", the clause starting with "wherein" provides more information about the noun phrase "progressive taxation."

• The Role of "Wherein".

• The word "wherein" acts as a relative adverb meaning "in which." Since it describes the specific nature of the "progressive taxation" mentioned just before it, it functions exactly like an adjective.

• Eliminating Other Options.

• Option 1: It does not explain "why" (cause) the taxation exists; it describes what it is.

• Option 3: It does not act as a subject or object (Noun Clause); it is a modifier.

• Option 4: While "wherein" can feel related to "where," in this context, it isn't describing a physical location (place), but rather a conceptual principle.

Therefore, the correct answer is Option 2.

Additional Information

• Tax terminology often uses formal relative adverbs like wherein, whereby, or whereof to connect legal principles to their specific applications. These almost always form Adjective Clauses.

Q17. Answer: (c) Doesn't India impose ancillary duties, such as customs duty, on imports with the intention of both generati...

The correct answer is 'Option 3'.

Key Points

• Understanding the Interrogative Negative.

• An Interrogative Negative sentence is a question that also contains a negation (not). It is often used to confirm a fact that the speaker believes to be true or to express surprise.

• The original sentence is in the Simple Present Tense ("India imposes..."). To form a question in this tense, we use the auxiliary verb do or does. Since "India" is a singular subject, we use does.

• Structure of the Transformation.

• The standard formula for an interrogative negative sentence is: Auxiliary Verb + Subject + Not + Main Verb...? or the contracted

form: Auxiliary Verb-n't + Subject + Main Verb...?

• Original: India imposes...

• Interrogative Negative: Doesn't India impose...? (Note that when using 'does', the main verb 'imposes' loses its '-s' and returns to its base form 'impose').

• Evaluating the Options.

• Option 1: This is a simple Interrogative sentence (positive question), not negative.

• Option 2: This is a 'Wh-' question and is grammatically incorrect (missing the auxiliary 'does').

• Option 4: This is in the Past Tense ("Did"), whereas the original sentence is in the Present Tense.

Therefore, the correct answer is Option 3.

Additional Information

• When transforming sentences, always ensure the tense remains consistent. If the original statement uses "imposes" (Present), your question must use "does" or "doesn't" (Present).

Q18. Answer: (b) Supposedly or apparently

The solution is in Hindi. Read it online.

Q19. Answer: (a) To absorb or include

The solution is in Hindi. Read it online.

Q20. Answer: (b) It created a single tax replacing many indirect taxes

The correct answer is 'Option 2'.

Key Points

• Option 2: It created a single tax replacing many indirect taxes.

• This is the primary structural change mentioned. The passage states that the GST "subsumed a plethora of erstwhile levies such as excise duty, service tax, and value-added tax," effectively creating a "unified national market."

• Option 1: It reduced income tax rates.

• This is incorrect. The passage categorizes income tax as a "direct tax." GST is an indirect tax, and the text does not mention any changes to income tax rates.

• Option 3: It eliminated customs duties.

• This is incorrect. The passage explicitly mentions that India "imposes ancillary duties such as customs duty on imports" in addition to the GST regime.

• Option 4: It increased corporate tax rates.

• This is incorrect. Corporate tax is listed as a direct tax; the passage does not state that GST led to an increase in corporate tax rates.

Therefore, the correct answer is Option 2.

Additional Information

• Direct vs. Indirect Taxes: The passage distinguishes between direct taxes (paid by individuals/entities on earnings) and indirect taxes (borne by consumers on goods/services).

• Purpose of Taxation: The regime is described as vital for financing public infrastructure, social welfare, and defense.

Q21. Answer: (a) P,Q,R,S

The correct answer is Option 1.

Key Points

• The sentence sequence should be logically structured to describe the events in the order they happen.

• Sentence P is the first sentence because it introduces the event of the flat tire, which sets the context for the subsequent actions:

• "A hiss of air and a flat tire ended his road trip suddenly."

• Sentence Q follows next as it describes the immediate action taken to address the flat tire:

• "He raised the car, his wrench already loosening lug nuts with a squeak."

• Sentence R comes third because it details how the flat tire was replaced with a spare tire:

• "With a grunt, he replaced the worn tire with the tiny spare, a stopgap measure."

• Sentence S is the final sentence as it concludes the sequence with the car being back on the road:

• "A few minutes later, the vehicle was back on the road, ready to proceed."

• The correct sequence is P, Q, R, S.

Coherent paragraph after rearrangement:

"A hiss of air and a flat tire ended his road trip suddenly. He raised the car, his wrench already loosening lug nuts with a squeak.

YourMockTest.com — Free Study Material

With a grunt, he replaced the worn tire with the tiny spare, a stopgap measure. A few minutes later, the vehicle was back on the road, ready to proceed."

Q22. Answer: (a) Q,R,P,S

The correct answer is Option 1.

Key Points

• The paragraph begins by describing the action of entering an email address, which sets the starting point of the sequence.

• Sentence Q is the first sentence as it introduces the act of entering the email address:

• "He swiftly entered a lengthy string of characters and numbers that was the recipient's email address."

• Sentence R follows as it describes the subject line summarizing the message:

• "A simple subject line summarizes the entire point of the message."

• Sentence P is the third sentence because it describes the act of crafting the email message:

• "He crafted his thoughts into a careful message, his fingers flying across the keys."

• Sentence S is the fourth as it concludes the paragraph with the sending of the email:

• "He breathed a last sigh of relief as he hit the send button and saw the email disappear."

• The correct sequence is Q, R, P, S.

Coherent paragraph after rearrangement:

"He swiftly entered a lengthy string of characters and numbers that was the recipient's email address. A simple subject line summarizes the entire point of the message. He crafted his thoughts into a careful message, his fingers flying across the keys. He breathed a last sigh of relief as he hit the send button and saw the email disappear."

Q23. Answer: (b) R, Q, P, S

The correct answer is Option 2.

Key Points

• The paragraph describes a gymnast's flawless performance, and the sentences need to be arranged to ensure a logical and coherent flow of events.

• Sentence R is the first sentence as it starts with the gymnast running toward the vault to begin the routine:

• "She ran briskly in the direction of the vault to start her routine."

• Sentence Q follows because it describes the gymnast’s actions after reaching the vault:

• "She flipped and twisted her body in midair as she blasted herself off the springboard."

• Sentence P is next as it depicts the conclusion of her jump:

• "She gracefully finished with her arms up after landing flawlessly on both feet."

• Sentence S is the last as it summarizes the outcome of her performance:

• "With a faultless performance and a perfect score, she bowed to the judges and the audience."

• The correct sequence is R, Q, P, S.

Coherent paragraph after rearrangement:

"She ran briskly in the direction of the vault to start her routine. She flipped and twisted her body in midair as she blasted herself off the springboard. She gracefully finished with her arms up after landing flawlessly on both feet. With a faultless performance and a perfect score, she bowed to the judges and the audience."

Q24. Answer: (c) naught, not

The solution is in Hindi. Read it online.

Q25. Answer: (b) Desecration

The solution is in Hindi. Read it online.

Q26. Answer: (a) Daughter-in-law

Family tree,

She is Karan's Daughter - in - law.

Hence, the correct answer is “Option 1”.

Q27. Answer: (a) Mother

Family tree,

Woman is Rahul's Mother.

Hence, the correct answer is “Option 1”.

Q28. Answer: (d) BQLAKMCSKQM

Logic:

Vowel + 2

Consonant -1

Hence, the correct answer is “Option 4”.

Q29. Answer: (c) Apologize, explain reasoning, and involve them in future decisions

Statement	Correctness	Reasoning
Ignore their feelings and proceed	Incorrect	Ignoring your partner’s feelings damages trust further and shows lack of respect for the partnership.
Blame external pressure	Incorrect	Shifting blame avoids accountability and does not resolve the core issue of broken trust.
Apologize, explain reasoning, and involve them in future decisions	Correct	Taking responsibility, communicating openly, and ensuring future collaboration helps rebuild trust and strengthens the partnership.
Fire them	Incorrect	This is an extreme and unjustified reaction that destroys the relationship instead of repairing it.

• Qualities projected in this situation: (Accountability, Communication, Trust-building, and Teamwork)

The correct answer is "option (3)".

Additional Information

In business partnerships, trust is built through transparency, mutual respect, and shared decision-making. A sincere apology combined with better collaboration going forward helps maintain a healthy and productive relationship.

Q30. Answer: (a) Only conclusion I follows.

Statement:

No tree is a plant.

Some plants are flowers.

Least possible Venn diagram,

Conclusions:

I. Some flowers are not trees → Follow (As some plants are flowers and No tree is plant. some flowers which are plant are not trees).

II. No flower is a tree → Does not follow (There is no direct relation given between flower and tree. so, it is possible not definite).

Only conclusion I follows.

Hence, the correct answer is “Option 1”.

Q31. Answer: (b) Only conclusion II follows.

Statement:

No chair is a stool.

All stools are wooden.

Least possible Venn diagram,

Conclusions:

I. No chair is wooden→ Does not follow (There is no direct relation given between wooden and chair. so, it is possible not definite).

II. Some wooden are not chairs → Follow (All stools are wooden and no chair is stool. so, some wooden which are stool are not chairs).

Only conclusion II follows.

Hence, the correct answer is “Option 2”.

Q32. Answer: (b) 6

Given:

Total number of students = 26

YourMockTest.com — Free Study Material

Deepa is 4th from the left.

Seema is 16th from the right.

First, convert Seema's position from right to left:

Position from left = Total students - Position from right + 1

= 26 - 16 + 1 = 11

So, Seema is 11th from the left.

Now, find the number of students between Deepa and Seema:

= (Position of Seema - Position of Deepa - 1)

= (11 - 4 - 1)

= 6

Hence, the number of students between Deepa and Seema is 6.

Therefore, the correct answer is "Option 2".

Q33. Answer: (b) Rs. 300

Given: Rs. 900 is to be divided among A, B, and C in the ratio 2:3:4.

Total ratio = 2 + 3 + 4 = 9

Value of one part = 900 ÷ 9 = 100

B's share = 3 parts = 3 × 100 = Rs. 300

Hence, the correct answer is "Option 3".

Q34. Answer: (b) Admit your mistake and discuss how to improve

Statement	Correctness	Reasoning
Blame others to protect your job	Incorrect	Avoids responsibility and damages trust within the team, showing poor emotional intelligence.
Admit your mistake and discuss how to improve	Correct	Demonstrates accountability, self-awareness, and willingness to learn, which are key aspects of emotional intelligence.
Ignore the issue and move on	Incorrect	Ignoring the mistake prevents learning and may lead to repeated errors, harming the team further.
Over-apologize to everyone involved	Incorrect	Excessive apologizing can appear unprofessional and does not focus on solutions or improvement.

• Qualities projected in this situation: (Accountability, Self-awareness, Responsibility, and Growth Mindset)

The correct answer is "option(2)".

Additional Information

Emotionally intelligent individuals take responsibility for their mistakes, learn from them, and focus on constructive solutions rather than blame or avoidance.

Q35. Answer: (d) Metacognition

The sequence follows the hierarchy of mental processes:

Sensation → receiving raw stimuli

Perception → interpreting stimuli

Cognition → higher-level thinking (reasoning, decision-making)

The next logical step is thinking about one's own thinking, i.e., Metacognition.

• Emotion and Memory are parts of cognition, not higher-order stages.

• Consciousness is broader but not the direct next step in this progression.

Hence, the correct answer is "Option 4".

YourMockTest.com – Free Study Material

Q36. Answer: (c) After the meeting, calmly discuss how the interruptions affect collaboration and suggest turn-taking

Statement	Correctness	Reasoning
Interrupt back aggressively to assert dominance	Incorrect	Escalates conflict, damages professional relationships, and reduces effective communication.
Start your own separate business secretly	Incorrect	Avoids addressing the issue directly and reflects poor professionalism and trust.
After the meeting, calmly discuss how the interruptions affect collaboration and suggest turn-taking	Correct	Demonstrates emotional intelligence, clear communication, and promotes healthier teamwork and mutual respect.
Stop sharing ideas altogether	Incorrect	Reduces contribution and productivity while failing to resolve the core issue.

• Qualities projected in this situation: (Emotional Intelligence, Communication Skills, and Conflict Resolution)

The correct answer is "option(3)".

Additional Information

Addressing concerns calmly after the meeting helps maintain professionalism while ensuring that both parties can express their viewpoints constructively. Suggesting structured turn-taking improves collaboration and prevents future misunderstandings.

Q37. Answer: (c) 351

Logic followed here is,

Hence, the correct answer is “Option 3”.

Q38. Answer: (a) Hive-Web- Spider

Each option presents a group of three words. Let's examine the category for each:

1) Hive – Web – Spider: This group is inconsistent. Hive and Web are types of animal habitats (for bees and spiders, respectively), but Spider is the animal itself, not a home.

2) Cave – Shed – Kennel: These are all types of shelters/habitats. A cave (bears/bats), a shed (tools/livestock), and a kennel (dogs) are all physical structures used for dwelling or storage.

3) Hole – Igloo – Cottage: These are all types of dwellings. A hole (rabbits/rodents), an igloo (humans/arctic), and a cottage (humans) are all structures used as homes.

4) Aquarium – Anthill – Kennel: These are all types of animal habitats. An aquarium (fish), an anthill (ants), and a kennel (dogs) are all specific locations where creatures live.

Options 2, 3, and 4 consist entirely of habitats/dwellings. Option 1 is the only one that breaks this pattern by including an organism (Spider) instead of a third habitat.

Hence, the correct answer is “Option 1”.

Q39. Answer: (d) MOON

Check the pattern of vowels (V) and consonants (C):

LAMP → 3 Consonant and 1 Vowel

DUST → 3 Consonant and 1 Vowel

GRIN → 3 Consonant and 1 Vowel

MOON → 2 Consonant and 2 Vowel

Only MOON has 2 Consonant and 2 Vowel, while others do not follow this pattern.

Hence, the correct answer is “Option 4”.

Q40. Answer: (c) They showed partial honesty

Statement	Correctness	Reasoning
They are a thief	Incorrect	Although they took money, they still returned the wallet, so labeling them completely as a thief is extreme.
They are honest	Incorrect	Taking Rs. 100 indicates dishonesty, so they cannot be considered fully honest.

YourMockTest.com — Free Study Material

They showed partial honesty	Correct	Returning the wallet shows honesty, but keeping Rs. 100 reflects dishonesty, indicating partial honesty.
They deserve a reward	Incorrect	Since they acted dishonestly by taking money, rewarding them would not be appropriate.

• Qualities projected in this situation: (Integrity, Moral Judgment, Honesty, Accountability)

The correct answer is "option (3)".

Additional Information

This situation reflects that ethical behavior is not always absolute. A person can display both honesty and dishonesty in the same act. True integrity means doing the right thing completely, even when no one is watching.

Q41. Answer: (c) Take transparent disciplinary action

Statement	Correctness	Reasoning
Ignore for friendship's sake	Incorrect	Compromises ethics, organizational integrity, and sets a dangerous precedent of favoritism.
Fire the friend privately	Incorrect	Lacks transparency and accountability, which are essential for maintaining trust within the organization.
Take transparent disciplinary action	Correct	Upholds fairness, integrity, and organizational values by ensuring accountability regardless of personal relationships.
Transfer the friend to another department	Incorrect	Avoids proper consequences and fails to address the seriousness of the misconduct.

• Qualities projected in this situation: (Integrity, Accountability, Leadership, and Ethical Decision-Making)

The correct answer is "option (3)".

Additional Information

A principled leader must prioritize organizational ethics over personal relationships. Transparent action builds trust, reinforces rules, and ensures a fair work culture for all employees.

Q42. Answer: (a) Track

The relationship in this analogy is based on the venue or specific surface where the activity takes place:

• Athletics : Stadium → Athletics (the broader category of sports) is typically held within a Stadium.

• Race : Track → A Race (the specific event) is specifically held on a Track.

Hence, the correct answer is “Option 1”.

Q43. Answer: (c) 19

Let total number of persons = NN

A is 13th from the left.

There are 4 persons between A and Z => position difference = 5

So, Z can be:

13 + 5 = 18th from left,

OR

13 − 5 = 8th from left

Given: Z is 2nd from one of the ends

Check cases:

If Z = 2nd from left => position = 2 (not matching 8 or 18)

If Z = 2nd from right => position from left = N - 1

So,

N − 1 = 18 => N = 19

Total persons in the row = 19.

Hence, the correct answer is “Option 3”.

Q44. Answer: (b) There has been unexpected rainy weather

Statement	Correctness	Reasoning
The store is having a special promotion on umbrellas	Incorrect	No information about any promotion is given in the statement, so this cannot be inferred.
There has been unexpected rainy weather	Correct	A sudden rise in umbrella sales along with a drop in sunscreen and beach items strongly suggests rainy weather conditions.
Beach season is ending	Incorrect	The change occurred over just three days, which is too short a period to conclude a seasonal shift.
Customers prefer umbrellas to beach items	Incorrect	This reflects a temporary situation, not a general preference of customers.

• Logical inference based on situational trends and cause-effect relationship

The correct answer is "option(2)".

Additional Information

When multiple related sales trends shift suddenly, it usually indicates an external factor (like weather) rather than long-term changes in customer preferences or seasons.

Q45. Answer: (b) The public nature of the praise created performance anxiety that outweighed its benefits

Statement	Correctness	Reasoning
Positive feedback is always harmful to performance	Incorrect	The statement is too generalized. The study only reports a specific context (public feedback), not all situations.
The public nature of the praise created performance anxiety that outweighed its benefits	Correct	Public feedback may have induced stress (evidenced by cortisol and heart rate increase), leading to anxiety and reduced performance.
The study's methodology was flawed	Incorrect	No evidence in the statement suggests flaws in methodology; results simply contradicted expectations.
Participants were lying about their emotional responses	Incorrect	The study relies on physiological measures, not self-reported emotions, so lying is not implied.

• Qualities projected in this situation: (Analytical Thinking, Logical Reasoning, Interpretation of Data, Contextual Understanding)

The correct answer is "option(2)".

Additional Information

Public evaluation or praise can sometimes increase pressure and self-consciousness, leading to stress responses that negatively impact performance, even when the intention is positive.

Q46. Answer: (d) 68, North-east

According to the given information,

A is in North - East direction from R.

Distance = $\sqrt{((32 + 28)^2+(32)^2)} = \sqrt{(3600+1024)} = \sqrt{4624} = 68$ km

Hence, the correct answer is “Option 4”.

Q47. Answer: (c) Shout

The words relate to modes of speaking:

• Whisper, Murmur, and Mumble → all indicate soft, low, or unclear speech

• Shout → indicates loud speech

Thus, Shout does not fit the pattern.

Hence, the correct answer is “Option 3”.

Q48. Answer: (c) 3

Logic: (First number × 6) - 4 = Second number

868 : 5204 →

(868 × 6) - 4 = 5208 - 4 = 5204

643 : 3854 →

(643 × 6) - 4 = 3858 - 4 = 3854

Similarly,

? : 14 →

? × 6 - 4 = 14

? × 6 = 14 + 4 = 18

? = 18/6

? = 3

Hence, the correct answer is “Option 3”.

Q49. Answer: (a) W

pattern followed here is,

A + 4 = E

E + 5 = J

J + 6 = P

P + 7 = W

Hence, the correct answer is “Option 1”.

Q50. Answer: (d) TFJIO

'COMPS' is coded as 'NKHKY'

'ABATE' is coded as 'ZOVXW'

Similarly,

'SMOKY' be coded as,

Hence, the correct answer is “Option 4”.

Q51. Answer: (b) 60.65

Given:

9 workers avg = 42.75

12 workers avg = 45.5

Two new workers = 52.2 and 48.4

Formula used:

Total = Average × Number

Calculations:

=> Total of 9 workers = 42.75 × 9 = 384.75

=> Total of 12 workers = 45.5 × 12 = 546

=> Total of 3 new workers = 546 − 384.75 = 161.25

=> Sum of 2 workers = 52.2 + 48.4 = 100.6

=> Third worker = 161.25 − 100.6 = 60.65

Therefore Daily productivity = 60.65 units

Q52. Answer: (c) 1

Given:

$\sin(2x + 50)° = \cos(2y − 50)°$

$0° < x + y < 90°$

Formula used:

$\sin \theta = \cos (90 − \theta)$

Calculations:

=> $\sin(2x + 50) = \cos(2y − 50)$

YourMockTest.com — Free Study Material

=> 2x + 50 = 90 − (2y − 50)
=> 2x + 50 = 90 − 2y + 50
=> 2x + 50 = 140 − 2y
=> 2x + 2y = 90
=> x + y = 45°
=> tan(x + y) = tan 45° = 1
Therefore Answer = 1

Q53. Answer: (d) 53.77%

Given:
Alloy A → x : y = 3 : 2
Alloy B → x : y = 5 : 6
Mixing ratio A : B = 4 : 3
Formula used:
Percentage = (x part ÷ total) × 100
Calculations:
In A:
=> Total = 3 + 2 = 5
=> x% in A = (3/5) × 100 = 60%
In B:
=> Total = 5 + 6 = 11
=> x% in B = (5/11) × 100 ≈ 45.45%
Now mixing in ratio 4 : 3
=> x% in C = (60×4 + 45.45×3) ÷ (4 + 3)
=> (240 + 136.36) ÷ 7
=> 376.36 ÷ 7 ≈ 53.77%
Therefore Percentage of x ≈ 53.77%

Q54. Answer: (b) (πr) / 3

Given:
Angle AOB = 60°
Radius = r
Formula Used:
Length of arc = (θ ÷ 360) × 2πr
Calculation:
=> Length of arc = (60 ÷ 360) × 2πr
=> Length of arc = (1 ÷ 6) × 2πr
=> Length of arc = (2πr)/6
=> Length of arc = πr/3
Therefore The correct answer is option 2.

Q55. Answer: (b) 14 seconds

Given:
Man speed = 2 m/s
Time to pass man = 36 sec
Platform length = 50% more than train
Time to cross platform = 48 sec
Tractor length = 60 m
Tractor speed = 6 m/s (opposite)
Formula used:
Speed = Distance ÷ Time
Calculations:
Let train speed = v, length = L

YourMockTest.com — Free Study Material

=> Passing man:
L = (v − 2) × 36
=> Crossing platform:
Platform = 1.5L
Total distance = L + 1.5L = 2.5L
=> 2.5L = v × 48
Now substitute L:
=> 2.5(v − 2) × 36 = v × 48
=> 90(v − 2) = 48v
=> 90v − 180 = 48v
=> 42v = 180
=> v = 4.285 m/s
=> L = (4.285 − 2) × 36 = 2.285 × 36 ≈ 82.26 m
Now crossing tractor:
Relative speed = 4.285 + 6 = 10.285 m/s
Total length = 82.26 + 60 = 142.26 m
=> Time = 142.26 ÷ 10.285 ≈ 13.83 sec
Therefore Time ≈ 14 seconds

Q56. Answer: (b) CP = Rs 1000

Given:
Trader → A = 20% profit
A → B = 10% loss
B → C = 5% profit
Final price = Rs. 1134
Formula used:
Successive multiplier method
Calculations:
Let CP = x
=> After 20% profit → x × 1.2
=> After 10% loss → x × 1.2 × 0.9
=> After 5% profit → x × 1.2 × 0.9 × 1.05
=> x × 1.134 = 1134
=> x = 1134 ÷ 1.134
=> x = 1000
Therefore Original cost price = Rs. 1000

Q57. Answer: (a) Rs. 1920

Given:
Principal (P) = Rs. 2400
Time (T) = 8 years
Amount doubles in 8 years under simple interest
Interest on Rs. 2400 for 3 years = Interest on Rs. Q for 5 years - Rs. 300
Formula Used:
Simple Interest (SI) = P × R × T ÷ 100
Calculation:
=> Amount doubles
=> Total Amount = Rs. 4800
=> SI for 8 years = Rs. 4800 - Rs. 2400 = Rs. 2400
=> Rs. 2400 = Rs. 2400 × R × 8 ÷ 100
=> R = 12.5%
=> SI on Rs. 2400 for 3 years = Rs. 2400 × 12.5 × 3 ÷ 100

YourMockTest.com — Free Study Material

=> SI on Rs. 2400 for 3 years = Rs. 900
=> SI on Rs. Q for 5 years = Rs. 900 + Rs. 300
=> SI on Rs. Q for 5 years = Rs. 1200
=> Rs. 1200 = Rs. Q × 12.5 × 5 ÷ 100
=> Rs. Q = Rs. 1200 × 100 ÷ (12.5 × 5)
=> Rs. Q = Rs. 1200 × 100 ÷ 62.5
=> Rs. Q = Rs. 1920
Therefore The correct answer is Rs. 1920.

Q58. Answer: (d) Rs. 14400

Shortcut Trick
Let the capital of R be 1 unit.
Capital of Q = 3 × R = 3 units.
Capital of P = 2 × Q = 2 × 3 = 6 units.
Ratio of Profit (P : Q : R) = 6 : 3 : 1 (Sum = 10 units).
P's share = (6/10) × 24000 = Rs. 14400.
Therefore The correct answer is Rs. 14400.
Alternate Method
Given:
Total profit = Rs. 24,000
Capital relationship: Q = 3R and P/2 = Q
Formula Used:
Profit Share prop. to Capital × Time (When time is same, Profit Ratio = Capital Ratio)
Calculations:
=> Let R's capital = x
=> Q's capital = 3x
=> P's capital = 2 × Q = 2(3x) = 6x
=> Ratio of Capitals (P : Q : R) = 6x : 3x : x = 6 : 3 : 1
=> Sum of ratio parts = 6 + 3 + 1 = 10
=> P's Profit share = (6/10) × 24000
=> P's share = 6 × 2400 = 14400
Therefore The correct answer is Rs. 14400.
Additional Information
Ratio of Profit in Partnership
Profit of A : Profit of B = (Capital of A × Time of A) : (Capital of B × Time of B).
Active vs. Sleeping Partner
An active partner manages the business and may receive a salary or extra commission from the profit before the remaining profit is divided.
Total Profit Calculation
Individual Share = (Individual Ratio Part ÷ Sum of Ratio Parts) × Total Profit.

Q59. Answer: (b) Rs. 342.86

Given:
Total amount = Rs. 1200
A = 1/2 of B
B = 1/2 of C
Formula used:
Share prop. to Ratio
Calculations:
Let B = x
=> A = x/2
=> C = 2x

YourMockTest.com — Free Study Material

=> Ratio A : B : C = x/2 : x : 2x
=> Multiply by 2 => 1 : 2 : 4
=> Total ratio = 1 + 2 + 4 = 7
=> B's share = 1200 × 2 ÷ 7
=> B's share = 2400 ÷ 7 = 342.86
Therefore B's share = Rs. 342.86 (approx)

Q60. Answer: (a) 6% loss

Given:
Marked up = 17.5% on CP
Discount = 20% on MP
Formula used:
SP = CP × (1 + Markup) × (1 − Discount)
Calculations:
=> MP = CP × (1 + 17.5/100) = CP × 1.175
=> SP = MP × (1 − 20/100) = 1.175 × 0.8 × CP
=> SP = 0.94 × CP
=> Loss % = (1 − 0.94) × 100
=> Loss % = 0.06 × 100 = 6%
Therefore Retailer incurs 6% loss.

Q61. Answer: (d) 75

Given:
Initial ratio (Red : Blue) = 5 : 3
Blue marbles removed = 15
New ratio (Red : Blue) = 5 : 2
Formula used:
Ratio = Quantity ÷ Common factor
Calculations:
Let Red = 5x and Blue = 3x
=> After removing 15 blue marbles:
Blue = 3x − 15
=> New ratio:
5x : (3x − 15) = 5 : 2
=> 5x/(3x-15) = 5/2
=> 5x × 2 = 5 × (3x − 15)
=> 10x = 15x − 75
=> 15x − 10x = 75
=> 5x = 75
=> x = 15
=> Red marbles = 5x = 5 × 15 = 75
Therefore Number of red marbles = 75

Q62. Answer: (c) Rs. 10,648

Given:
Principal (P) = Rs. 8000
Rate (r) = 10%
Time (t) = 3 years
Formula used:
A = P (1+r/100)^t
Calculations:
$A = 8000 (1+10/100)^3$
$=> A = 8000 (1.1)^3$

=> A = 8000 × 1.331

=> A = 10648

Therefore Amount after 3 years = Rs. 10,648

Q63. Answer: (a) Rs. 9,000

Given:

Ratio of savings (Arjun : Karan) = 7 : 9

Increase in savings = Rs. 3000 each

New ratio = 10 : 12

Formula used:

Ratio = Quantity ÷ Common factor

Calculations:

Let Arjun = 7x and Karan = 9x

=> After increase:

Arjun = 7x + 3000

Karan = 9x + 3000

=> New ratio:

(7x + 3000) : (9x + 3000) = 10 : 12

=> (7x+3000)/(9x+3000) = 10/12

=> (7x+3000)/(9x+3000) = 5/6

=> 6(7x + 3000) = 5(9x + 3000)

=> 42x + 18000 = 45x + 15000

=> 45x − 42x = 18000 − 15000

=> 3x = 3000

=> x = 1000

=> Karan’s saving = 9x = 9 × 1000 = 9000

Therefore Karan’s saving = Rs. 9,000

Q64. Answer: (b) 3600

Given:

Numbers = 16, 20, 24

Formula used:

Least number divisible by given numbers = LCM

Calculations:

16 = 2^4

20 = 2² × 5

24 = 2³ × 3

=> LCM = 2^4 × 3 × 5

=> LCM = 16 × 15

=> LCM = 240

Now check options:

=> 1600 ÷ 240 = not integer

=> 3600 ÷ 240 = 15 Yes

=> 6400 ÷ 240 = not integer

=> 14400 ÷ 240 = 60 Yes

Least among valid = 3600

Therefore Correct answer = 3600

Q65. Answer: (a) 48 km/h

Shortcut Trick

When the distance traveled is the same for both parts of a journey, the Average Speed is calculated using the harmonic mean formula: 2xy ÷ (x + y).

Here, x = 40 km/h and y = 60 km/h.

YourMockTest.com — Free Study Material

Average Speed = (2 × 40 × 60) ÷ (40 + 60)
Average Speed = 4800 ÷ 100 = 48 km/h.
Therefore The correct answer is 48 km/h.
Alternate Method
Given:
Distance for each trip = 120 km
Speed during onward journey (S1) = 40 km/h
Speed during return journey (S2) = 60 km/h
Formula: Average Speed = Total Distance ÷ Total Time
=> Time taken for onward journey (T1) = Distance ÷ S1 = 120 ÷ 40 = 3 hours
=> Time taken for return journey (T2) = Distance ÷ S2 = 120 ÷ 60 = 2 hours
=> Total Distance = 120 + 120 = 240 km
=> Total Time = 3 + 2 = 5 hours
=> Average Speed = 240 ÷ 5 = 48 km/h
Therefore The correct answer is 48 km/h.
Additional Information
Average Speed (Equal Time Intervals)
If a person travels at speed S1 and S2 for equal time intervals, the Average Speed is the arithmetic mean: (S1 + S2) ÷ 2.
Unit Conversion
To convert speed from km/h to m/s, multiply by 5/18. To convert from m/s to km/h, multiply by 18/5.
Relative Speed
When two objects move in the opposite direction, relative speed is (S1 + S2). In the same direction, it is |S1 − S2|.

Q66. Answer: (a) 1394

Given:
Divisors = 20, 25, 35, 40
Remainders = 14, 19, 29, 34
Formula used:
If remainders are same difference => Number = LCM − common difference
Calculations:
=> 20 − 14 = 6
=> 25 − 19 = 6
=> 35 − 29 = 6
=> 40 − 34 = 6
=> Common difference = 6
Now find LCM of 20, 25, 35, 40
$20 = 2^2 \times 5$
$25 = 5^2$
$35 = 5 \times 7$
$40 = 2^3 \times 5$
=> $LCM = 2^3 \times 5^2 \times 7$
=> LCM = 8 × 25 × 7 = 1400
=> Required number = 1400 − 6 = 1394
Therefore Required least number = 1394

Q67. Answer: (a) 44

Given:
Average of 20 numbers = 45
50% of numbers increased by 4 each
50% of numbers decreased by 6 each
Formula Used:
New Average = (Sum of new numbers ÷ Total numbers)

Calculation:
=> Total sum of 20 numbers = 20 × 45
=> Total sum = 900
=> 50% of 20 = 10 numbers
=> Increase for 10 numbers = 10 × 4
=> Total increase = 40
=> Decrease for remaining 10 numbers = 10 × 6
=> Total decrease = 60
=> Net change in sum = 40 - 60
=> Net change = -20
=> New total sum = 900 - 20
=> New total sum = 880
=> New average = 880 ÷ 20
=> New average = 44
Therefore The correct answer is 44.

Q68. Answer: (a) 250 km

Given:
Distance between City M and City N = 450 km
Speed of first car = 50 km/h
Speed of second car = 40 km/h
Formula Used:
Time to meet = Distance ÷ (Speed of first car + Speed of second car)
Distance traveled by first car = Speed of first car × Time to meet
Calculation:
=> Time to meet = 450 ÷ (50 + 40)
=> Time to meet = 450 ÷ 90
=> Time to meet = 5 hours
=> Distance traveled by first car = 50 × 5
=> Distance traveled by first car = 250 km
Therefore The correct answer is 250 km.

Q69. Answer: (c) 20 days

Given:
A + B = 12 days
B + C = 15 days
A + B + C = 10 days
Formula used:
Work = LCM of days
Efficiency = Work ÷ Time
Calculations:
LCM of 12, 15, 10 = 60
=> Total work = 60 units
=> (A + B) 1 day work = 60 ÷ 12 = 5 units
=> (B + C) 1 day work = 60 ÷ 15 = 4 units
=> (A + B + C) 1 day work = 60 ÷ 10 = 6 units
=> A + C = (A + B + C) − B
=> First find B:
=> (A + B) + (B + C) = A + 2B + C
=> 5 + 4 = 9 units
=> A + B + C = 6 units
=> (A + 2B + C) − (A + B + C) = B

=> 9 − 6 = 3 units
=> B = 3 units
=> A + C = (A + B + C) − B = 6 − 3 = 3 units
=> Time taken by (A + C) = 60 ÷ 3 = 20 days
Therefore A and C together can complete the work in 20 days.

Q70. Answer: (b)

Shortcut Trick
Efficiency of A = 48 ÷ 12 = 4 and B = 48 ÷ 16 = 3 (taking Total Work = 48).
Combined work of A and B in 4 days = (4 + 3) × 4 = 28 units.
Remaining work = 48 − 28 = 20 units.
Extra days for B = 20 ÷ 3 = 6 2/3 days.
Therefore The correct answer is 6 2/3 days.
Alternate Method
Given:
Time taken by A = 12 days
Time taken by B = 16 days
They work together for 4 days.

Person	Days	Total Work (LCM)	Efficiency
A	12	48	4
B	16	3	

Calculations:
=> Total work to be completed = LCM(12, 16) = 48 units
=> Work done by A and B together in 1 day = 4 + 3 = 7 units
=> Total work done in 4 days = 7 × 4 = 28 units
=> Remaining work after A leaves = 48 − 28 = 20 units
=> Time taken by B to finish remaining work = 20 ÷ 3 = 6 2/3 days
Therefore The correct answer is 6 2/3 days.
Additional Information
Efficiency and Time
The efficiency of a person is inversely proportional to the time taken to complete the work (Efficiency = Work ÷ Time).
Combined Work Formula
If two people finish work in x and y days respectively, they together finish it in (x × y) ÷ (x + y) days.
Pipes and Cisterns
This concept follows the same logic where an inlet pipe has positive efficiency and an outlet pipe has negative efficiency.
Work and Wages
Wages are distributed among workers based on the ratio of work done by each, which is the product of their efficiency and time worked.

Q71. Answer: (a) 22.5%

Given:
Marked Price = Rs. 8,000
Selling Price = Rs. 6,200
Formula Used:
Discount Percentage = (Marked Price - Selling Price) / Marked Price × 100
Calculation:
=> Discount = Rs. 8,000 - Rs. 6,200
=> Discount = Rs. 1,800
=> Discount Percentage = (1,800) / (8,000) × 100
=> Discount Percentage = 0.225 × 100
=> Discount Percentage = 22.5%

YourMockTest.com — Free Study Material

Therefore The correct answer is 22.5%.

Q72. Answer: (d) Rs. 10,000

Given:

Simple Interest = Rs. 1200

Rate of Interest = 6% per annum

Time = 2 years

Formula Used:

Simple Interest = (Principal × Rate × Time) ÷ 100

Calculation:

=> Rs. 1200 = (Principal × 6 × 2) ÷ 100

=> Rs. 1200 = (Principal × 12) ÷ 100

=> Principal = (Rs. 1200 × 100) ÷ 12

=> Principal = Rs. 120000 ÷ 12

=> Principal = Rs. 10000

Therefore The correct answer is Rs. 10000.

Q73. Answer: (c) 10%

Shortcut Trick

Interest for 3 years (5 − 2) = 2500 − 2000 = Rs. 500

Interest for 1 year = 500 ÷ 3 = Rs. 166.67

Principal (P) = Amount after 2 years − 2 years interest = 2000 − (2 × 500 ÷ 3) = Rs. 5000/3

Rate (R) = (Interest for 1 year ÷ Principal) × 100 = (500/3 ÷ 5000/3) × 100 = 10%

Therefore The correct answer is 10%.

Alternate Method

Given:

Amount at the end of 2 years (A2) = Rs. 2000

Amount at the end of 5 years (A5) = Rs. 2500

Formula Used:

Amount (A) = Principal (P) + Simple Interest (SI)

SI = (P × R × T) ÷ 100

Calculations:

=> Interest for 3 years (from 2nd to 5th year) = Rs. 2500 − Rs. 2000 = Rs. 500

=> Interest for 1 year = 500 ÷ 3

=> Interest for 2 years = (500 ÷ 3) × 2 = Rs. 1000/3

=> Principal (P) = Amount after 2 years − Interest for 2 years

=> P = 2000 − 1000/3 = (6000 − 1000) ÷ 3 = Rs. 5000/3

=> Rate (R) = (Interest for 1 year × 100) ÷ Principal

=> R = ((500/3) × 100) ÷ (5000/3)

=> R = (500 × 100) ÷ 5000 = 10%

Therefore The correct answer is 10%.

Additional Information

Simple Interest Properties

Simple interest remains constant for every year as it is always calculated on the original Principal amount.

Rate of Interest Formula

Rate (R) can also be calculated as: R = (SI for 1 year ÷ Principal) × 100.

Principal and Amount Relationship

The difference between the amounts of two different years is equal to the Simple Interest for the intervening time period.

Q74. Answer: (b) 5:4

Given:

Total mixture = 60 litres

Ratio (Milk : Water) = 2 : 1

YourMockTest.com — Free Study Material

Removed = 10 litres mixture

Added = 10 litres water

Formula used:

Removed quantity in ratio

Calculations:

Initial milk = (2/3) × 60 = 40 litres

Initial water = (1/3) × 60 = 20 litres

=> Removed milk = (2/3) × 10 = 6.67 litres

=> Removed water = (1/3) × 10 = 3.33 litres

=> Remaining milk = 40 − 6.67 = 33.33 litres

=> Remaining water = 20 − 3.33 = 16.67 litres

=> Add 10 litres water:

=> New water = 16.67 + 10 = 26.67 litres

=> Final ratio = 33.33 : 26.67

=> Multiply by 3 => 100 : 80

=> Simplify => 5 : 4

Therefore New ratio of milk to water = 5 : 4

Q75. Answer: (b) 15 cm

Given:

PT = 10

PQ = 5

QR = x

Formula Used:

$PT^2 = PQ \times PR$

Calculation:

=> PR = PQ + QR = 5 + x

=> $PT^2 = PQ \times PR$

=> $10^2 = 5(5 + x)$

=> 100 = 25 + 5x

=> 100 - 25 = 5x

=> 75 = 5x

=> x = 15

Therefore The correct answer is 15.

Q76. Answer: (c) Alauddin Khalji

The correct answer is Alauddin Khalji.

Key Points

• Alauddin Khalji, the second ruler of the Khalji dynasty, implemented significant reforms in the market system during his reign (1296–1316 AD) in the Delhi Sultanate.

• He introduced strict control over prices of goods, including essential commodities like grains, cloth, and horses, to avoid inflation and ensure affordability for common people.

• Alauddin Khalji's market reforms were aimed at curbing black marketing, hoarding, and exploitation by merchants and traders. He established a system of fixed prices and ensured their enforcement by appointing officials known as market controllers.

• He set up separate markets for different commodities, such as "grain market" (mandi), cloth market, and livestock market, which were closely monitored by his administration.

• To ensure fair trade practices and prevent corruption, Alauddin Khalji employed spies ("barids") to keep an eye on merchants and monitor market activities. Severe punishments were imposed on those who violated the rules.

• These reforms were crucial to maintaining economic stability during his reign and reflected his administrative foresight and commitment to welfare.

Additional Information

• Firoz Shah Tughlaq:

• Firoz Shah Tughlaq (1351–1388 AD), a ruler of the Tughlaq dynasty, is known for his contributions to infrastructure

YourMockTest.com — Free Study Material

development, including canals, roads, and buildings.

• He introduced several welfare measures, such as the construction of hospitals and colleges, but did not implement significant market reforms.

• Balban:

• Balban (1266–1287 AD), a ruler of the Slave dynasty, focused on strengthening the central authority and military system. He introduced the "Theory of Kingship" but did not focus on market control or economic reforms.

• His reign was marked by efforts to curb the power of nobles and maintain law and order.

• Iltutmish:

• Iltutmish (1211–1236 AD), another ruler of the Slave dynasty, is best known for consolidating the Delhi Sultanate and introducing the silver coinage system (Tanka).

• Although he made significant contributions to administrative and financial reforms, he did not implement market reforms like Alauddin Khalji.

• Market Reforms under Alauddin Khalji:

• Alauddin Khalji's market reforms were primarily driven by his military campaigns, which required the availability of affordable supplies for his armies.

• These reforms were an early example of state intervention in the economy to regulate trade and ensure social welfare.

• He successfully maintained price stability and prevented economic exploitation during his reign.

• The reforms showcased his administrative capabilities and highlighted the importance of a regulated economy in medieval India.

Important Points

• Spies (Barids): Alauddin Khalji extensively used spies to monitor market activities, ensuring strict implementation of his policies.

• Price Control: Fixed prices for all commodities were enforced, and violations were met with severe penalties.

• Separate Markets: Dedicated markets for grains, cloth, and other goods ensured better organization and regulation.

• Economic Stability: The reforms were crucial in maintaining affordability for common people and supporting his military campaigns.

• Legacy: Alauddin Khalji's market reforms are considered a landmark in the economic history of the Delhi Sultanate, showcasing the role of state intervention in medieval governance.

Q77. Answer: (a) Advisory Jurisdiction of the Supreme Court

The correct answer is Advisory Jurisdiction of the Supreme Court.

Key Points

• Advisory Jurisdiction of the Supreme Court: This feature was borrowed from the Canadian Constitution. Under Article 143 of the Indian Constitution, the President of India can seek the opinion of the Supreme Court on questions of law or matters of public importance. This advisory role strengthens the judiciary's role in governance.

• The Canadian model of federalism also influenced the Indian Constitution in other ways, such as the division of powers between the Union and States.

• The advisory jurisdiction provides a mechanism for resolving legal uncertainties, ensuring clarity on constitutional or legal matters. This is a hallmark of the federal structure influenced by Canada.

• None of the other options listed (Rule of Law, Impeachment of the President, Fundamental Duties) were borrowed from Canada. These features have their origins in other sources like the British Constitution, U.S. Constitution, or Soviet principles.

• This distinctive feature in India ensures the Supreme Court's role in offering legal counsel to the executive, promoting democratic accountability and rule of law.

Additional Information

• Advisory Jurisdiction in Canada:

• The Canadian Supreme Court has a similar advisory jurisdiction, where the government can refer legal or constitutional questions to the court for its opinion.

• This feature was adapted in India to ensure a consultative relationship between the judiciary and the executive.

• Article 143 of the Indian Constitution:

• This article empowers the President of India to refer questions of law or public importance to the Supreme Court.

• The opinion provided by the Supreme Court under this article is advisory and not binding on the President.

• Example: Presidential references like the Keshav Singh case or the Babri Masjid demolition are significant applications of this provision.

• Other Features Borrowed from Canada:

• Federal system with a strong Centre: The Indian Constitution follows a federal structure with a tilt towards central authority, inspired by Canada.

• Residuary Powers: In India, the residuary powers (those not mentioned in the Union or State List) are vested with the Centre,

similar to the Canadian model.

• Origins of Other Options:

• Rule of Law: Borrowed from the British Constitution, it signifies equality before the law and supremacy of law.

• Impeachment of the President: Inspired by the U.S. Constitution, this process ensures checks and balances in a democracy.

• Fundamental Duties: These were added to the Indian Constitution by the 42nd Amendment Act, 1976, and were inspired by the Soviet Constitution.

Important Points

• Federal Features of Indian Constitution:

• India's Constitution is federal in structure but unitary in spirit, influenced by the Canadian model.

• Examples include division of powers, independent judiciary, and dual government system.

• However, India has unique features like a single citizenship and flexibility in amending the Constitution, differentiating it from traditional federal states.

• Presidential Reference:

• One of the notable cases under Article 143 was the Keshavananda Bharati case, where basic structure doctrine was established.

• Another example is the reference on the Ayodhya land dispute (2019).

Q78. Answer: (d) Right to religious conversion

The correct answer is Right to religious conversion.

Key Points

• Article 25 of the Indian Constitution guarantees the freedom of conscience and the right to freely profess, practice, and propagate religion to all citizens of India.

• The scope of Article 25 includes:

• Freedom of conscience: Every individual has the right to hold and express their personal religious beliefs.

• Right to profess: Individuals can openly declare and follow their chosen religion.

• Right to practice: Citizens are free to engage in religious rituals, customs, and ceremonies.

• Right to propagate: Citizens have the right to spread or communicate their religious beliefs to others.

• However, the right to religious conversion is not explicitly mentioned or protected under Article 25. Conversion through force, fraud, or inducement is not permissible under Indian law, as it violates public order and individual rights.

• While Article 25 protects individual freedoms, it is subject to reasonable restrictions related to public order, morality, and health, as well as the rights of other citizens.

• The term "propagate" does not imply a fundamental right to convert others through coercion or other unlawful means, as clarified by the judiciary in various judgments.

Additional Information

• Key Provisions under Article 25:

• Freedom of Conscience: This allows individuals to hold their personal religious beliefs without interference from the state or others.

• Right to Propagate: This includes the right to spread religious beliefs but does not extend to forced conversion.

• Reasonable Restrictions: The state can impose restrictions to maintain public order, morality, and health, ensuring that religious practices do not infringe on others' rights.

• Judicial Interpretation:

• In the Rev. Stainislaus vs. State of Madhya Pradesh (1977) case, the Supreme Court ruled that the right to propagate does not include the right to convert others forcibly.

• The court upheld anti-conversion laws in several states, emphasizing that forced conversions disrupt public order.

• Anti-Conversion Laws in India:

• Several states, including Uttar Pradesh, Madhya Pradesh, Gujarat, and Odisha, have enacted laws to regulate religious conversions.

• These laws aim to prevent conversions through force, fraud, or inducement while respecting individual freedoms.

• Other Related Articles:

• Article 26: Grants the right to manage religious affairs to religious denominations.

• Article 27: Prohibits the use of public funds for promoting or maintaining any religion.

• Article 28: Restricts religious instruction in educational institutions maintained by the state.

Important Points

• Reasonable Restrictions: The state can regulate or restrict religious practices if they conflict with public order, morality, or health.

• Secularism in India: The Indian Constitution follows the principle of secularism, ensuring equal treatment of all religions without favoring or discriminating against any particular faith.

• Religious Freedom Worldwide: Many countries adopt different approaches to religious freedom. For example:

• The First Amendment of the US Constitution protects freedom of religion, including the right to practice and propagate one's faith.

• In contrast, countries like France emphasize strict secularism, restricting overt religious expressions in public spaces.

Q79. Answer: (a) Beijing

The correct answer is Beijing.

Key Points

• The Asian Infrastructure Investment Bank (AIIB) is an international financial institution that focuses on financing infrastructure projects across Asia and beyond.

• It was formally established in December 2015, and began operations in January 2016.

• The headquarters of AIIB is located in Beijing, China, which reflects China's role as the leading initiator and largest shareholder in the bank.

• AIIB aims to enhance economic development and regional cooperation by providing loans for infrastructure projects such as transportation, energy, water systems, and urban development.

• It currently has 106 approved members from across the globe, including major economies like India, Germany, and the UK.

Additional Information

• Overview of AIIB:

• The Asian Infrastructure Investment Bank was proposed by China in 2013 and officially launched in 2015.

• It is designed to complement existing international financial institutions like the World Bank and Asian Development Bank.

• AIIB focuses on sustainable infrastructure and connectivity projects that promote green development.

• Membership and Voting Rights:

• AIIB has both regional and non-regional members, with regional members holding the majority of voting rights.

• China is the largest shareholder, holding approximately 26.6% of voting rights, followed by India and Russia.

• The voting system is based on the size of economic contributions from member countries.

• Key Functions:

• AIIB provides financial support for infrastructure projects through loans, equity investments, and guarantees.

• It emphasizes environmentally sustainable and socially inclusive development.

• Examples of projects funded by AIIB include renewable energy initiatives, transportation networks, and urban infrastructure development.

• Comparison with Other Institutions:

• Unlike the World Bank or Asian Development Bank, AIIB has a narrower focus on infrastructure financing.

• AIIB operates with less stringent conditions compared to traditional financial institutions, making it a popular choice for developing countries.

Important Points

• Major Projects:

• AIIB has financed several major projects globally, including India's Amravati Sustainable Capital City Development Project and Turkey's Istanbul Seismic Risk Mitigation Project.

• It also supports renewable energy initiatives, such as solar and wind power projects in different countries.

• Environmental and Social Framework:

• AIIB has developed an Environmental and Social Framework (ESF) to ensure that its projects meet high environmental and social standards.

• This framework emphasizes sustainability, stakeholder engagement, and transparency.

• Global Significance:

• AIIB has emerged as a key player in global development financing, challenging the dominance of Western-led institutions like the World Bank.

• Its flexible approach and focus on Asia make it highly relevant for developing economies in the region.

Q80. Answer: (c) 2016

The correct answer is 2016.

Key Points

• The Agreement on Cooperation in the Peaceful Uses of Nuclear Energy was signed between India and Japan on 11 November

2016.

• This agreement marked a significant milestone in bilateral relations between India and Japan, emphasizing their cooperation in the peaceful use of nuclear energy.

• The agreement allows Japan to supply nuclear reactors, fuel, and technology to India, which is not a signatory to the Non-Proliferation Treaty (NPT). This highlights Japan's recognition of India's commitment to peaceful nuclear energy uses.

• India committed to adhering to stringent International Atomic Energy Agency (IAEA) safeguards to ensure that the nuclear materials and technology are used exclusively for peaceful purposes.

• The agreement enables India to access advanced nuclear technologies from Japan, which is known for its expertise in the field, thereby supporting India's growing energy demands and climate change mitigation efforts.

Additional Information

• India's Nuclear Energy Program:

• India has ambitious plans for nuclear energy to meet its growing energy demands and reduce reliance on fossil fuels.

• The country operates several nuclear reactors and has plans to expand its nuclear power capacity in the coming decades.

• India is a signatory to the Civil Nuclear Cooperation Agreements with multiple countries, including the USA, Russia, France, and Canada.

• Japan's Role in Nuclear Technology:

• Japan is renowned for its advanced nuclear technology and expertise in nuclear power generation.

• Japan's nuclear industry has been pivotal in developing safe and efficient nuclear reactor designs, emphasizing safety standards post-Fukushima disaster.

• Japan's cooperation with India reflects its trust in India's commitment to using nuclear energy responsibly.

• International Atomic Energy Agency (IAEA):

• The IAEA is an international organization that promotes the peaceful use of nuclear energy and prevents its misuse for military purposes.

• India has a longstanding association with the IAEA and has implemented its safeguards in civilian nuclear facilities.

• Through its adherence to IAEA guidelines, India demonstrates its commitment to responsible nuclear energy usage.

• Non-Proliferation Treaty (NPT):

• The NPT aims to prevent the spread of nuclear weapons and promote peaceful use of nuclear energy.

• India is not a signatory to the NPT but has been recognized internationally for its responsible nuclear energy policies.

• The India-Japan agreement signifies Japan's acknowledgment of India's responsible nuclear energy practices, despite non-adherence to the NPT.

Important Points

• Energy Demand in India:

• India's energy demand is projected to double by 2040, making nuclear energy an essential component of its energy mix.

• The agreement with Japan facilitates the transfer of advanced technologies to support India's energy goals and reduce carbon emissions.

• Significance of Civil Nuclear Agreements:

• Such agreements enable India to access critical nuclear technology and fuel from advanced nuclear nations.

• They foster international cooperation, ensuring the peaceful use of nuclear energy and adherence to global safety standards.

• Global Energy Transition:

• Countries worldwide are transitioning to cleaner energy sources, and nuclear power plays a vital role in reducing greenhouse gas emissions.

• India's collaboration with Japan aligns with global efforts to combat climate change through sustainable energy solutions.

Q81. Answer: (b) Flute

The correct answer is Flute.

Key Points

• Hariprasad Chaurasia is an internationally renowned Indian classical musician, celebrated for his exceptional skill and mastery over the flute.

• He is credited with popularizing the bansuri, a traditional Indian bamboo flute, in the realm of Hindustani classical music.

• Born on 1 July 1938, in Allahabad (now Prayagraj), Hariprasad Chaurasia pursued his passion for music despite his father’s desire for him to become a wrestler.

• He received training in classical vocal music under Raja Ram before dedicating himself to learning the flute under the guidance of Pandit Bholanath Prasanna.

• Hariprasad Chaurasia has collaborated with several prominent artists globally and has composed music for films, showcasing

the versatility of the flute across various genres.

• He has been honored with numerous awards, including the prestigious Padma Bhushan (1992) and Padma Vibhushan (2000), for his immense contribution to Indian classical music.

Additional Information

• The Flute in Indian Classical Music:

• The bansuri is a side-blown bamboo flute that holds a significant place in Indian classical music, with its roots tracing back to ancient mythology and scriptures.

• It is often associated with Lord Krishna, who is depicted playing the bansuri, symbolizing love and divinity in Indian culture.

• The bansuri produces a melodious and soothing sound, making it ideal for expressing the intricate nuances of raagas in Hindustani classical music.

• Other Classical Instruments in India:

• Sitar: Popularized globally by maestros like Pandit Ravi Shankar, the sitar is a stringed instrument known for its complex sound and resonance.

• Tabla: A pair of hand-played drums, the tabla is essential in Indian classical and folk music, providing rhythmic accompaniment.

• Violin: Though of Western origin, the violin has been adapted into Indian classical music and is widely used in both Hindustani and Carnatic traditions.

• Hariprasad Chaurasia's Global Influence:

• He has worked with renowned international artists like George Harrison of The Beatles and composer John McLaughlin, blending Indian classical music with global genres.

• Hariprasad Chaurasia co-founded the Vrindavan Gurukul in Mumbai and Bhubaneswar to train young musicians in the art of flute playing.

• His collaborations extend to Indian cinema, where he has composed music for iconic films like Silsila and Lamhe, alongside Pandit Shivkumar Sharma as the duo Shiv-Hari.

Important Points

• Awards and Recognitions:

• Hariprasad Chaurasia has received international accolades, including the Sangeet Natak Akademi Award and the Konark Samman.

• He was conferred with honorary doctorates from prestigious institutions for his contribution to music education and preservation of Indian classical traditions.

• Legacy:

• Hariprasad Chaurasia's work has inspired countless musicians worldwide to take up the flute and explore Indian classical music.

• His teachings and performances continue to bridge cultural and musical gaps, promoting harmony and understanding through the universal language of music.

Q82. Answer: (b) Ministry of Communications

The correct answer is Ministry of Communications.

Key Points

• The Deen Dayal SPARSH Yojana (Scholarship for Promotion of Aptitude & Research in Stamps as a Hobby) was launched by the Ministry of Communications in August 2017, with the aim to promote philately as a hobby among school students.

• The scheme provides a scholarship to students of classes VI to IX who display a strong inclination towards philately, which is the study and collection of postage stamps.

• The scholarship is awarded to students who score 60% or more marks in their previous final examination and pass a philately quiz and project conducted by the postal department.

• The scheme also aims to develop a scientific temperament and a spirit of inquiry among students through the hobby of philately.

• Under this scheme, 40 scholarships are awarded per postal circle, and each scholarship carries a monetary award of Rs. 6,000 annually (Rs. 500 per month).

Additional Information

• Philately:

• Philately refers to the study and collection of postage stamps and postal history.

• It is considered an important educational and historical hobby, helping students understand the culture, history, and heritage of their country and the world.

• Philately is often referred to as the "king of hobbies" due to its wide appeal and historical significance.

• Ministry of Communications:

• The Ministry of Communications is responsible for the functioning of India Post, which oversees postal services in the country.

• The ministry includes two key departments: Department of Posts and Department of Telecommunications.

YourMockTest.com — Free Study Material

• The Department of Posts manages initiatives like philately and other schemes aimed at leveraging postal services for education and awareness.
• Criteria for Deen Dayal SPARSH Yojana:
• The scheme is open to students of classes VI to IX in recognized schools across India.
• Participants are required to have their own philately deposit account and submit a project on a philately-related topic.
• Students must pass a philately quiz and a philatelic project evaluation conducted by the postal circle.
• Promotion of Philately:
• India Post organizes various philately exhibitions, workshops, and competitions to promote this hobby among school students.
• Philately clubs are also being established in schools to encourage participation in stamp collection and related activities.

Important Points

• Other Initiatives by India Post:
• India Post organizes National Philatelic Exhibitions to showcase rare and unique stamps.
• Special initiatives like My Stamp allow individuals to create personalized stamps with their own photographs.
• India Post's Role in Education:
• The postal department actively contributes to promoting education and awareness through schemes like Deen Dayal SPARSH Yojana.
• It also runs initiatives for financial literacy and digital inclusion in rural areas.
• Global Importance of Philately:
• Many countries use philately as a medium to promote tourism, culture, and history.
• International philatelic exhibitions are held worldwide, fostering cultural exchange and historical preservation.

Q83. Answer: (b) Institute for Economics and Peace

The correct answer is Institute for Economics and Peace.

Key Points

• The Global Terrorism Index (GTI) is published annually by the Institute for Economics and Peace (IEP), a global think tank headquartered in Sydney, Australia.
• The index provides a comprehensive summary of global trends in terrorism, analyzing its impact across countries and regions.
• The GTI measures terrorism using various indicators such as number of incidents, fatalities, injuries, and property damage.
• It is based on data collected by the Global Terrorism Database (GTD), maintained by the University of Maryland.
• The report offers insights into patterns of terrorism, its causes, and societal impacts, making it a crucial resource for policymakers, academics, and researchers.

Additional Information

• Institute for Economics and Peace (IEP):
• The IEP is an independent, non-partisan think tank established in 2008 with the aim to develop metrics for peace and to promote a better understanding of the drivers of peace.
• The organization is known for publishing global indices such as the Global Peace Index (GPI) and the Global Terrorism Index (GTI).
• Its headquarters is located in Sydney, Australia, and it has offices in New York, Brussels, and Mexico City.
• IEP works on research related to peace and conflict studies, economic impact of violence, and strategies to improve societal resilience.
• Global Terrorism Database (GTD):
• The GTD is a comprehensive database on terrorist incidents worldwide, maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland.
• It includes data on over 200,000 terrorist events from 1970 to the present.
• The database is widely used by researchers, policymakers, and institutions for analyzing terrorism trends and impacts.
• Key Features of the Global Terrorism Index:
• It categorizes countries based on their levels of terrorist activity, ranging from the most affected to least affected.
• The index highlights regions most vulnerable to terrorism and identifies trends in terrorist tactics, motives, and organizational behavior.
• It also explores underlying factors contributing to terrorism, such as political instability, socioeconomic factors, and conflicts.
• Uses of the Global Terrorism Index:
• Policymakers use the index to formulate counter-terrorism strategies and allocate resources effectively.
• Academics and researchers employ GTI data for studies on global security, peacebuilding, and conflict resolution.

YourMockTest.com — Free Study Material

• The index also informs international organizations, such as the United Nations, for crafting global initiatives to combat terrorism.

Important Points

• SIPRI: The Stockholm International Peace Research Institute focuses on research related to conflicts, armaments, and disarmament, but does not publish the Global Terrorism Index.

• United Nations: While the UN addresses global terrorism issues, it does not release a specific index such as the GTI.

• WHO: The World Health Organization is primarily concerned with global health issues and does not engage in terrorism-related studies.

Q84. Answer: (a) UNDP

The correct answer is UNDP.

Key Points

• The Human Development Report (HDR) is published annually by the United Nations Development Programme (UNDP). It was first launched in 1990 as an independent report commissioned by the UNDP.

• The report introduces the Human Development Index (HDI), which is a composite measure of health, education, and income, designed to assess and rank countries' development levels beyond just economic factors.

• The HDR aims to promote the concept of “human development”, emphasizing the importance of expanding people's choices and improving their well-being, rather than focusing solely on economic growth.

• Each year, the report highlights a specific theme related to global development challenges, such as inequality, climate change, or poverty, providing in-depth analysis and policy recommendations.

• The HDR is considered one of the most influential publications in the field of international development and is widely used by policymakers, researchers, and organizations globally.

Additional Information

• United Nations Development Programme (UNDP):

• The UNDP was established in 1965 and is headquartered in New York City, USA. It is the United Nations' global development network.

• It focuses on areas such as poverty reduction, sustainable development, democratic governance, and climate and disaster resilience.

• The UNDP operates in 170 countries and territories, working with governments and local communities to address development challenges.

• The organization is also responsible for managing the UN Volunteers programme and the United Nations Capital Development Fund (UNCDF).

• Human Development Index (HDI):

• The HDI is a composite index that measures a country's average achievements in three basic aspects of human development:

• Health: Measured by life expectancy at birth.

• Education: Measured by mean years of schooling and expected years of schooling.

• Standard of Living: Measured by Gross National Income (GNI) per capita (adjusted for purchasing power parity).

• The HDI ranks countries on a scale from 0 to 1, with higher scores indicating higher levels of development.

• The HDI is a key tool for comparing development levels across countries and identifying areas for improvement.

• Other Organizations in the Options:

• IMF (International Monetary Fund): The IMF focuses on global monetary cooperation and financial stability but does not publish the HDR.

• World Bank: The World Bank emphasizes financial and technical assistance for development projects but does not produce the HDR.

• World Economic Forum (WEF): The WEF is known for its Global Competitiveness Report and other economic studies, not the HDR.

Important Points

• The HDR's overarching goal is to advocate for policies that prioritize human well-being over mere economic growth.

• It has introduced several supplementary indices, such as the Gender Inequality Index (GII) and the Multidimensional Poverty Index (MPI), to provide a more nuanced understanding of development.

• The HDR contributes to global discussions on sustainable development, helping shape the Sustainable Development Goals (SDGs) agenda adopted by the United Nations in 2015.

• Notable contributors to the first HDR in 1990 included economists Amartya Sen and Mahbub ul Haq, who were instrumental in shaping the human development approach.

YourMockTest.com – Free Study Material

Q85. Answer: (a) Institute for Competitiveness

The correct answer is Institute for Competitiveness.

Key Points

• The State Health Index is an initiative of NITI Aayog, developed in collaboration with the Ministry of Health and Family Welfare, and with technical assistance from the Institute for Competitiveness.

• The State Health Index aims to measure and monitor the performance of states and union territories in the health sector, focusing on outcomes, governance, and processes.

• The Institute for Competitiveness is India's foremost think tank that works on competitiveness and strategy. It provides technical expertise to enhance the framework and methodology of indices like the State Health Index.

• The index is released annually and evaluates states based on various parameters such as neonatal mortality rate, maternal mortality rate, immunization coverage, and overall healthcare infrastructure.

• The collaboration ensures that the index is robust and provides actionable insights for states to improve their healthcare systems.

Additional Information

• Institute for Competitiveness:

• The Institute for Competitiveness is a global partner of the Institute for Strategy and Competitiveness at Harvard Business School and is part of the Microeconomics of Competitiveness network.

• It provides policy-related insights and focuses on improving productivity and economic performance in India.

• It also contributes to initiatives like the India Innovation Index, Ease of Living Index, and other strategic frameworks.

• State Health Index:

• The State Health Index is a tool to drive healthy competition among states and union territories to improve their healthcare systems.

• It has three main domains: Health Outcomes, Governance and Information, and Key Inputs/Processes.

• States are categorized as Larger States, Smaller States, and Union Territories for a fair comparison.

• The index helps policymakers identify areas requiring attention and measure the impact of health interventions.

• Ministry of Health and Family Welfare:

• The Ministry plays a critical role in formulating and implementing health-related policies in India.

• It also supports initiatives like the National Health Mission (NHM), Ayushman Bharat, and other healthcare programs.

• The ministry ensures that indices like the State Health Index align with national priorities and international health standards.

• NITI Aayog:

• NITI Aayog, established in 2015, is the premier policy think tank of the Government of India.

• It focuses on fostering cooperative federalism through structured support initiatives like indices and rankings.

• It ensures that initiatives like the State Health Index promote sustainable and inclusive development in line with India's vision for healthcare reform.

Important Points

• Other Technical Assistance Organizations:

• The World Bank is often involved in large-scale healthcare reforms globally and provides financial and technical support for various health programs.

• The CSIR (Council of Scientific and Industrial Research) contributes to innovation and research in healthcare but does not directly assist in the State Health Index.

• The Ministry of Earth Sciences focuses on environmental and climate-related aspects, not healthcare indices.

• Impact of State Health Index:

• The index encourages states to focus on outcomes and transparency in governance.

• It has resulted in some states implementing targeted interventions to improve maternal and child health indicators.

• It is considered a foundational tool for achieving UN Sustainable Development Goals related to health in India.

Q86. Answer: (c) 1710

The correct answer is 1710.

Key Points

• Steeplechase is a type of obstacle race that involves hurdles and water jumps, primarily part of track and field events today.

• The origins of the steeplechase can be traced back to 1710 in England, where it began as a cross-country race between church steeples, hence the name "steeplechase."

• Participants in the original steeplechase races had to traverse various natural obstacles such as stone walls, ditches, and streams, replicating the challenges of countryside terrain.

• The modern steeplechase format in athletics was later introduced and standardized, with the race usually covering 3000 meters and featuring fixed barriers and a water jump.

• It became a part of the Olympic Games in the 1900 Paris Olympics, further solidifying its status as a competitive track and field event.

Additional Information

• Historical Background:

• The term "steeplechase" originates from horse racing events in 18th-century Ireland and England, where riders raced from one church steeple to another, using the steeples as visible landmarks.

• The transition from horseback steeplechase to foot racing occurred gradually, and its inclusion in athletics adapted the obstacles to a track setting.

• Key Features of Modern Steeplechase:

• The modern steeplechase race typically involves 28 fixed barriers and 7 water jumps over a distance of 3000 meters.

• Barriers are 91.4 cm (36 inches) high for men and 76.2 cm (30 inches) high for women, with water jumps designed to test agility and endurance.

• Olympic Significance:

• The 3000-meter steeplechase first appeared in the Olympic Games in 1900 and is a staple event in track and field competitions globally.

• Notable athletes like Ezekiel Kemboi of Kenya have dominated the event, reflecting its popularity in countries with a strong middle-distance running tradition.

• Comparison with Horse Steeplechase:

• While the original horse steeplechase involves longer distances and natural countryside obstacles, the modern athletics steeplechase focuses on standardized barriers and a controlled course within a stadium setting.

• Horse steeplechase events, such as the famous Grand National in England, remain popular today, showcasing the sport's lasting legacy.

Important Points

• Historical Evolution: The steeplechase transitioned from a rural horse race to a structured athletic event, reflecting the adaptability of sports to different contexts and audiences.

• Global Popularity: The event has gained significant recognition in countries with a history of middle-distance and long-distance running, such as Kenya and Ethiopia.

• Training Challenges: Athletes preparing for the steeplechase require specialized training to master both running endurance and the technical skills needed for clearing barriers and water jumps efficiently.

• Key Records: The current world records for the 3000-meter steeplechase are held by Saif Saaeed Shaheen of Qatar (men's) and Beatrice Chepkoech of Kenya (women's).

Q87. Answer: (a) Ganga

The correct answer is Ganga.

Key Points

• The Farakka Barrage is constructed on the Ganga River, one of the most important rivers in India. It is situated in the Murshidabad district of West Bengal.

• The primary purpose of the Farakka Barrage is to divert water from the Ganga into the Bhagirathi-Hooghly River system to ensure the navigability of the Kolkata Port.

• The barrage was commissioned in 1975 and is a crucial infrastructure for water resource management in the region.

• It spans a length of 2,240 meters, making it one of the largest barrages in the world.

• The Farakka Barrage also plays a significant role in irrigation, flood control, and hydropower generation, benefiting millions of people in West Bengal and Bihar.

Additional Information

• Significance of the Ganga River:

• The Ganga is the longest river in India, with a total length of approximately 2,525 kilometers, flowing through India and Bangladesh.

• It originates from the Gangotri Glacier in the Indian Himalayas at Gaumukh in Uttarakhand.

• The river is revered as sacred in Hinduism and is a lifeline for millions who depend on it for agriculture, drinking water, and transportation.

• Features and Functions of the Farakka Barrage:

• The barrage includes 109 gates to regulate water flow effectively.

• It helps maintain the navigability of the Bhagirathi-Hooghly River, which was critical for the economic viability of Kolkata Port.

• The barrage also assists in controlling the siltation problem in the Hooghly River.

• Environmental Impact:

• The construction of the Farakka Barrage has led to changes in the river ecosystem, affecting aquatic life and fish migration patterns.

• It has also been associated with water disputes between India and Bangladesh, particularly regarding the sharing of Ganga water during the dry season.

• International Context:

• The Ganga Water Treaty was signed in 1996 between India and Bangladesh to address water-sharing issues related to the Farakka Barrage.

• This treaty ensures an equitable distribution of water during the lean season (January to May), fostering cooperation between the two nations.

Important Points

• Disputes and Challenges:

• The India-Bangladesh dispute over water sharing has been a significant issue, as the downstream flow affects agriculture and livelihoods in Bangladesh.

• During the monsoon, the barrage sometimes causes flooding, impacting surrounding areas in West Bengal and Bangladesh.

• Technical Features:

• The barrage is equipped with sluice gates to manage water levels and flow effectively.

• It also includes a feeder canal, which diverts water from the Ganga to the Bhagirathi-Hooghly River.

• Developmental Role:

• The Farakka Barrage has contributed to the economic development of eastern India, particularly by supporting irrigation, navigation, and agriculture.

• It also aids in generating hydropower, contributing to the energy needs of the region.

Q88. Answer: (a) Brisbane

The correct answer is Brisbane.

Key Points

• Brisbane has been officially announced as the host city for the 2032 Summer Olympics Games. The decision was made during the International Olympic Committee (IOC) session held in Tokyo on 21 July 2021.

• This marks the third time that Australia will host the Olympics, following Melbourne in 1956 and Sydney in 2000.

• Brisbane's selection follows the implementation of the new IOC bidding process, which aims to streamline and simplify the process of choosing Olympic host cities.

• The city was chosen because of its strong infrastructure, government support, and readiness to host the games, as well as its commitment to sustainability and legacy planning for the event.

• The 2032 Brisbane Olympics will feature numerous venues across the city and surrounding areas, including existing facilities and newly planned developments.

Additional Information

• International Olympic Committee (IOC):

• The IOC is a non-governmental sports organization established in 1894 to oversee the Olympic Games.

• It is headquartered in Lausanne, Switzerland and is responsible for selecting host cities for the Olympics and ensuring the integrity of the games.

• The new bidding process introduced by the IOC aims to make the selection of host cities more transparent and cost-effective.

• Previous Host Cities:

• The Summer Olympics have been hosted by various cities worldwide, including Tokyo in 2021, Paris in 2024, and Los Angeles in 2028.

• Brisbane's selection aligns with the IOC's goal of spreading the games to different regions globally.

• Infrastructure and Planning:

• Brisbane's existing infrastructure includes world-class stadiums, transport systems, and accommodation facilities, which will be upgraded as needed for the 2032 Olympics.

• The city has pledged to deliver a sustainable and environmentally friendly event to leave a lasting legacy for future generations.

• Economic Impact:

• Hosting the Olympics is expected to bring significant economic benefits to Brisbane, including increased tourism, job creation, and international exposure.

• The event will also promote sports and cultural exchange, fostering global unity and collaboration.

Important Points

• 2032 Olympics Timeline:

• The event is scheduled to take place between 23 July and 8 August 2032.

• Preparations and infrastructure upgrades are expected to begin several years in advance to ensure smooth execution of the games.

• Other Candidate Cities:

• While Doha, Salt Lake City, and Nice were considered as potential candidates, Brisbane emerged as the preferred choice due to its readiness and compliance with IOC requirements.

• The streamlined bidding process reduced the financial burden on competing cities, encouraging more equitable participation.

• Legacy Goals:

• Brisbane aims to use the Olympics to promote sports development, improve urban infrastructure, and address social issues through community engagement.

• The legacy projects will focus on ensuring long-term benefits for the city and its residents.

Q89. Answer: (c) Both I and II

The correct answer is Both I and II.

Key Points

• Remote sensing satellites are used for various applications, including monitoring environmental conditions and agricultural practices.

• Draught assessment: Remote sensing technology is instrumental in identifying regions affected by drought. By analyzing satellite imagery, experts can monitor soil moisture, vegetation health, and water bodies to predict and manage drought conditions. Hence, statement I is correct.

• Estimation of yield of various crops: Satellites equipped with sensors can evaluate the health and productivity of crops. Data derived from remote sensing enables accurate estimation of crop yield by monitoring factors like chlorophyll content, crop growth stages, and land usage. Hence, statement II is correct.

• Both applications showcase the ability of remote sensing satellites to assist in agricultural management and environmental monitoring. Thus, the correct answer is Both I and II.

Additional Information

• Remote Sensing Satellites:

• Remote sensing satellites are equipped with advanced sensors to capture data about Earth's surface from space.

• They utilize technologies such as optical imaging, infrared sensing, and radar to analyze land, water, and atmosphere.

• Examples include India’s RISAT (Radar Imaging Satellite) and the USA’s Landsat program.

• These satellites play a crucial role in monitoring natural disasters, urban planning, resource management, and environmental conservation.

• Drought Monitoring:

• Remote sensing identifies drought-prone regions by analyzing vegetation indices like Normalized Difference Vegetation Index (NDVI).

• It tracks water availability in reservoirs and rivers using radar and optical sensors.

• This technology aids in effective water resource management and disaster preparedness.

• Crop Yield Estimation:

• Satellites monitor agricultural fields to predict crop yield by analyzing factors like vegetation health and growth patterns.

• Techniques such as multispectral imaging help in assessing soil conditions and crop productivity.

• For example, India’s Resourcesat satellite provides critical data for agricultural planning.

• Global Examples:

• NASA’s MODIS: Used for global vegetation monitoring and drought analysis.

• European Space Agency's Sentinel: Provides high-resolution imagery for agricultural applications.

• India’s Cartosat: Offers detailed mapping data for environmental and agricultural use.

Important Points

• Key Benefits:

• Remote sensing satellites provide real-time data, enabling proactive decision-making in agriculture and disaster management.

• They reduce dependency on ground surveys, saving time and resources.

• Applications beyond agriculture:

• Used in urban planning, forest management, and climate change studies.

• Critical for monitoring natural disasters like floods, earthquakes, and cyclones.

YourMockTest.com — Free Study Material

Q90. Answer: (c) PSLV

The correct answer is PSLV.

Key Points

• Mangalyaan, officially known as the Mars Orbiter Mission (MOM), is India's first interplanetary mission launched by the Indian Space Research Organisation (ISRO).

• The mission was launched on 5th November 2013 using the Polar Satellite Launch Vehicle (PSLV-C25), a reliable and cost-effective launch vehicle developed by ISRO.

• PSLV, or Polar Satellite Launch Vehicle, is known for its versatility and has been used to launch satellites into various orbits, including geostationary, polar, and interplanetary orbits.

• The Mangalyaan mission's objective was to study the Martian atmosphere, surface, and mineralogy, and demonstrate India's capability in interplanetary space missions.

• The PSLV-C25 successfully placed the Mars Orbiter into Earth's orbit, which later transitioned into a Martian orbit, marking India's entry into interplanetary exploration.

Additional Information

• Polar Satellite Launch Vehicle (PSLV):

• PSLV is a medium-lift launch vehicle developed by ISRO and has been operational since its first successful flight in 1994.

• It is known for its versatility and has launched satellites into polar, geostationary, and interplanetary orbits.

• PSLV is a four-stage rocket with alternating solid and liquid propulsion systems, making it highly reliable for diverse missions.

• It has been used for launching satellites like Chandrayaan-1, Mangalyaan, and various Earth observation satellites.

• Mangalyaan Mission:

• India became the first Asian country to reach Martian orbit and the first nation globally to do so in its maiden attempt.

• The mission cost approximately Rs. 450 crore, making it one of the most cost-effective Mars missions globally.

• Mangalyaan carries five scientific instruments to study Martian surface features, morphology, atmospheric composition, and dynamics.

• The mission's success established ISRO as a significant player in the field of space exploration and interplanetary missions.

• Other ISRO Launch Vehicles:

• SLV-3: The Satellite Launch Vehicle-3 was India's first experimental satellite launcher, used in the early 1980s.

• ASLV: The Augmented Satellite Launch Vehicle was developed in the late 1980s but had limited success.

• GSLV: The Geosynchronous Satellite Launch Vehicle is used for heavier payloads and launches into geostationary orbits.

• Each of these launch vehicles contributed to the development of India's space program, but PSLV has been the most versatile and reliable for interplanetary missions like Mangalyaan.

• Significance of Mangalyaan:

• The mission demonstrated India's technological capabilities in space exploration and interplanetary missions.

• It helped in the study of Martian surface and atmosphere, paving the way for future Mars exploration missions.

• Mangalyaan's success brought global recognition to ISRO and enhanced India's position in the international space community.

Important Points

• PSLV Achievements:

• PSLV has completed over 50 successful launches, including missions for foreign clients.

• It launched a record 104 satellites in a single mission (PSLV-C37) in February 2017.

• Global Impact:

• Mangalyaan established India as a space-faring nation capable of conducting cost-effective space missions.

• The success of Mangalyaan encouraged collaborations with other space agencies like NASA, ESA, and others.

• Future Missions:

• ISRO is working on future missions like Chandrayaan-3 and Gaganyaan, India's first human spaceflight program.

• Further Mars exploration missions are being planned based on the data gathered by Mangalyaan.

Q91. Answer: (c) GSLV

The correct answer is GSLV.

Key Points

• Chandrayaan-2, India’s second lunar exploration mission, was launched on July 22, 2019, by the Indian Space Research Organisation (ISRO).

• The mission was launched using the Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk III), also known as “Bahubali”.

• GSLV Mk III is a three-stage heavy-lift launch vehicle developed by ISRO, specifically designed to carry heavier payloads into

higher orbits.

• The primary objective of the Chandrayaan-2 mission was to explore the South Pole of the Moon, which remains a relatively unexplored region.

• The GSLV Mk III successfully placed the Chandrayaan-2 spacecraft into a highly elliptical orbit around Earth from where it proceeded on its journey to the Moon.

Additional Information

• Geosynchronous Satellite Launch Vehicle (GSLV Mk III):

• The GSLV Mk III is the heaviest and most powerful launch vehicle developed by ISRO, capable of carrying payloads of up to 4 tons into Geosynchronous Transfer Orbit (GTO) and 10 tons to Low Earth Orbit (LEO).

• This launch vehicle has three stages: a solid rocket booster (S200), a liquid core stage (L110), and a cryogenic upper stage (C25).

• The cryogenic stage (C25) uses liquid hydrogen and liquid oxygen as propellants, providing the necessary thrust for the final stage of the mission.

• The GSLV Mk III was also used for launching India's first manned space mission, the Gaganyaan mission.

• Chandrayaan-2 Mission:

• Chandrayaan-2 consisted of three components: an Orbiter, a Lander (Vikram), and a Rover (Pragyan).

• The mission aimed to study the Moon's topography, mineralogy, exosphere, and the presence of water ice in the permanently shadowed regions near the poles.

• The Vikram lander attempted a soft landing on the Moon's surface but lost communication during the final descent. However, the Orbiter continues to function and send valuable scientific data.

• Other Launch Vehicles:

• SLV-3: India's first experimental satellite launch vehicle, capable of placing payloads in low Earth orbit. It was used for the Rohini satellite in 1980.

• ASLV: Augmented Satellite Launch Vehicle was developed to improve payload capacity but was phased out due to limited capabilities.

• PSLV: Polar Satellite Launch Vehicle is known for its reliability and versatility in launching satellites into polar and geosynchronous orbits. It is primarily used for launching Earth observation satellites.

• India's Lunar Exploration Program:

• The Chandrayaan-1 mission, launched in October 2008, was India's first lunar mission and confirmed the presence of water molecules on the Moon.

• Chandrayaan-3, a follow-up mission, aims to achieve a successful soft landing on the Moon and is in development.

Important Points

• The GSLV Mk III is also known as LVM-3 (Launch Vehicle Mark-3) and was developed indigenously by ISRO.

• The launch of Chandrayaan-2 marked a significant milestone for India in the global space exploration community.

• The South Pole of the Moon is of great interest due to the potential presence of water ice and the possibility of future human exploration.

• India became the fourth country in the world to attempt a soft landing on the Moon, following the United States, the Soviet Union, and China.

Q92. Answer: (c) IISER, Pune

The correct answer is IISER, Pune.

Key Points

• The Indian Institute of Science Education and Research (IISER), Pune, has developed a hybrid aerogel for extracting gold from e-waste.

• This innovation provides an eco-friendly and cost-effective solution to recover precious metals from electronic waste, which is a growing concern globally.

• The developed aerogel uses a combination of biomaterials and synthetic materials, making it highly efficient in adsorbing gold ions from e-waste solutions.

• The aerogel exhibits selective adsorption, ensuring that gold can be separated from other metals present in e-waste.

• This breakthrough technology is a significant step toward addressing the environmental hazards caused by improper e-waste disposal and supports the principles of sustainable development.

Additional Information

• IISER, Pune:

• The Indian Institute of Science Education and Research, Pune, is a premier research institute established in 2006 to promote advanced research and education in science.

• It is recognized for its contributions to various fields, including chemistry, biology, and materials science.

• IISERs have been instrumental in fostering cutting-edge research and developing innovative technologies to address real-world problems.

• E-Waste Management:

• E-waste refers to discarded electronic devices like computers, mobile phones, and televisions that contain hazardous substances and valuable metals.

• Improper disposal of e-waste leads to environmental pollution and health hazards due to toxic chemicals like lead, mercury, and cadmium.

• Effective recycling and recovery of metals from e-waste are essential to minimize its environmental impact and conserve natural resources.

• Hybrid Aerogels:

• Hybrid aerogels are lightweight, porous materials that combine organic and inorganic components.

• They have applications in various fields, including adsorption, catalysis, and environmental remediation.

• The aerogel developed by IISER Pune is designed specifically for the adsorption of gold ions, demonstrating high efficiency and selectivity.

• Gold Recovery from E-Waste:

• Gold is one of the most valuable metals found in e-waste, often used in electronic components for its conductivity and corrosion resistance.

• Traditional methods of gold recovery involve the use of toxic chemicals like cyanide, posing significant environmental and health risks.

• The hybrid aerogel provides a green alternative by eliminating the need for harmful chemicals.

Important Points

• Global E-Waste Statistics:

• As per the Global E-Waste Monitor 2020, the world generated 53.6 million metric tons of e-waste in 2019, with only 17.4% being recycled properly.

• India is the third-largest producer of e-waste globally, generating around 3.2 million metric tons annually.

• Environmental Benefits of Gold Recovery:

• Recycling gold from e-waste reduces the need for mining, which causes deforestation, soil erosion, and water pollution.

• It also helps in conserving finite natural resources and reducing the carbon footprint associated with gold production.

Q93. Answer: (b) NASA

The correct answer is NASA.

Key Points

• PUNCH Mission, which stands for Polarimeter to Unify the Corona and Heliosphere, is a mission launched by NASA to study the Sun's outer corona and its transition into the solar wind.

• The mission is expected to be launched in March 2025. Its primary goal is to investigate the mechanisms that shape and accelerate the solar wind and to understand the origins of coronal mass ejections (CMEs).

• The PUNCH spacecraft consists of four small satellites that work together to image and study the Sun's corona and solar wind in unprecedented detail.

• The mission emphasizes the importance of understanding space weather phenomena, which have implications for satellite operations, astronaut safety, and Earth's technological systems.

• This initiative is managed by NASA's Science Mission Directorate and involves collaboration with multiple research institutions and organizations.

Additional Information

• NASA:

• NASA, or the National Aeronautics and Space Administration, is a United States government agency responsible for space exploration, scientific discovery, and aerospace research.

• Established in 1958, NASA has been instrumental in conducting groundbreaking missions like the Apollo moon landings, Mars rover explorations, and the Hubble Space Telescope.

• NASA's headquarters is located in Washington, D.C., with multiple research centers across the United States, including the Kennedy Space Center in Florida and the Jet Propulsion Laboratory in California.

• Some notable NASA missions include the James Webb Space Telescope, VoyagerArtemis Program aimed at returning humans to the Moon.

• Space Weather:

• Space weather refers to the environmental conditions in space caused by the Sun's activity, including solar winds, flares, and

coronal mass ejections.

• Understanding space weather is crucial for predicting disruptions to satellite communications, GPS systems, and power grids on Earth.

• Missions like PUNCH contribute to the study of space weather, improving our ability to forecast its impacts and protect technological systems.

• Coronal Mass Ejections (CMEs):

• CMEs are massive bursts of solar wind and magnetic fields rising above the Sun's corona or being released into space.

• They can cause geomagnetic storms that disrupt Earth's magnetic field, affecting satellites and electrical systems.

• PUNCH aims to provide insights into the origins and behavior of CMEs, contributing to space weather research.

• Other Space Agencies:

• ESA: The European Space Agency is a multinational organization focused on space exploration and research. It is headquartered in Paris, France.

• JAXA: Japan Aerospace Exploration Agency is Japan's national aerospace and space agency, headquartered in Tokyo, Japan.

• ISRO: Indian Space Research Organisation is India's national space agency, headquartered in Bengaluru, India. ISRO is known for its cost-effective missions like Chandrayaan and Mangalyaan.

Important Points

• Launch Details: PUNCH is set to launch in March 2025 using a SpaceX Falcon 9 rocket.

• Global Collaboration: While primarily a NASA mission, PUNCH involves collaboration with various research entities and scientists worldwide.

• Scientific Objectives: The mission aims to advance our understanding of the Sun-Earth connection, crucial for improving space weather predictions.

• Technological Impact: Understanding solar wind and CMEs can help enhance the resilience of Earth's technological infrastructure against space weather disruptions.

Q94. Answer: (a) Pressure and temperature

The correct answer is Pressure and Temperature.

Key Points

• The state of a substance (solid, liquid, or gas) is primarily determined by its pressure and temperature. These two factors control the phase transitions between different states of matter.

• Temperature: Higher temperatures provide particles with more kinetic energy, allowing them to overcome intermolecular forces and transition from solid to liquid (melting) or liquid to gas (evaporation).

• Pressure: Increasing pressure forces particles closer together. At high pressures, gases can condense into liquids or even solids. Conversely, reducing pressure can allow substances to transition to gaseous states more easily.

• For example, water exists as ice, liquid water, or steam depending on the specific combination of pressure and temperature. At standard atmospheric pressure, water freezes at 0°C and boils at 100°C.

• Phase diagrams are used to represent the relationship between pressure, temperature, and the state of a substance. They show the conditions under which a substance exists as a solid, liquid, or gas.

Additional Information

• Density and Viscosity: These properties are characteristics of a substance and do not determine its state. For example, honey is highly viscous but is always in a liquid state under normal conditions. Similarly, density changes with the state but does not directly define the state of matter.

• Pressure and Density: While density is influenced by pressure (e.g., compressing a gas increases its density), it is not the sole determinant of a substance’s state. Pressure and temperature together influence phase changes.

• Temperature and Weight: Weight is a measure of gravitational force on a substance and has no relevance in determining its state. Temperature, however, is a critical factor in phase transitions.

• Phase Transitions: Common phase transitions include melting (solid to liquid), freezing (liquid to solid), vaporization (liquid to gas), condensation (gas to liquid), sublimation (solid to gas), and deposition (gas to solid).

• Critical Point: At the critical temperature and pressure, the distinction between liquid and gas disappears, and the substance exists as a supercritical fluid. This is a unique state of matter with properties of both gases and liquids.

Important Points

• Triple Point: The triple point is the specific pressure and temperature at which all three states of a substance (solid, liquid, and gas) coexist in equilibrium. For water, this occurs at 0.01°C and 611.657 Pascals.

• Real-life Applications: Understanding pressure and temperature is crucial in fields like meteorology, material science, and engineering. For example, refrigeration systems rely on controlling pressure and temperature to achieve desired cooling effects.

• Examples of Phase Changes: Dry ice (solid CO_2) sublimates directly into gas at atmospheric pressure, while metals like iron transition between solid and liquid phases during smelting processes.

• Phase Diagrams: These graphical representations help visualize the conditions under which substances change states, aiding in industrial and scientific applications such as chemical synthesis and material design.

Q95. Answer: (a) Five

The correct answer is Five.

Key Points

• Sawai Jai Singh II, the ruler of Amber (later Jaipur), was a renowned astronomer and mathematician who constructed five astronomical observatories, known as Jantar Mantars, in different parts of India.

• The observatories were established in the cities of Delhi, Jaipur, Ujjain, Mathura, and Varanasi.

• These observatories were built during the early 18th century, between 1724 and 1734, under Sawai Jai Singh's supervision.

• The purpose of these observatories was to make accurate astronomical measurements, aid in the preparation of astrological charts, and improve the study of celestial movements.

• The most prominent of these observatories is the Jantar Mantar in Jaipur, which is a UNESCO World Heritage site and contains the world's largest stone sundial, known as the Samrat Yantra.

Additional Information

• Architectural Significance:

• The observatories are known for their unique and innovative architectural designs, combining science and aesthetics.

• Each Jantar Mantar includes several instruments made of stone and brass, such as sundials, astrolabes, and quadrants, which were used for astronomical calculations.

• Scientific Contributions:

• Sawai Jai Singh II was inspired by Islamic and European astronomical techniques, such as those of Ptolemy and Ulugh Beg.

• He compiled the Zij-i Muhammad Shahi, an astronomical table based on observations from his observatories and earlier works.

• Preservation of Observatories:

• Most of the observatories have been preserved, with Jaipur's Jantar Mantar being the most well-maintained and popular among tourists.

• The Jantar Mantars are recognized as historical landmarks and represent India's rich scientific heritage.

• Decline of Mathura Observatory:

• The Jantar Mantar in Mathura has been lost due to neglect and urban development, leaving only four of the original five observatories intact.

Important Points

• UNESCO Recognition:

• The Jantar Mantar in Jaipur was designated as a UNESCO World Heritage Site in 2010 for its cultural and scientific significance.

• Legacy:

• Sawai Jai Singh II's efforts in astronomy exemplify India's contributions to science and mathematics during the Mughal period.

Q96. Answer: (b) He committed suicide.

The correct answer is He committed suicide..

Key Points

• Robert Clive, also known as Clive of India, played a key role in establishing British control over India during the 18th century. However, his later life was marked by controversies and personal struggles.

• In 1774, Robert Clive died by suicide. He was found to have used a penknife to end his life at the age of 49.

• Clive suffered from health issues, including chronic pain due to gallstones, and was known to take opium for relief, which likely contributed to his mental health struggles.

• His life was also marred by accusations of corruption and mismanagement during his tenure in India. He faced severe criticism in Britain after returning from India, which may have exacerbated his emotional and psychological distress.

• While his achievements in India were significant, including the victory at the Battle of Plassey (1757), his later years were overshadowed by personal and professional challenges.

Additional Information

• Early Life and Career:

• Robert Clive was born in 1725 in England and joined the British East India Company as a clerk in 1744.

• He played a pivotal role in consolidating British power in India, especially with his victory at the Battle of Plassey, which marked the beginning of British dominance in Bengal.

• Controversies and Corruption:

• Clive faced accusations of embezzlement and misuse of power during his time in India.

• He was summoned by the British Parliament in 1772 to defend his actions, and although he was ultimately exonerated, the scrutiny took a toll on his reputation and mental health.

• Health Issues:

• Clive struggled with physical ailments, including gallstones, and his dependence on opium for pain relief likely worsened his psychological state.

• Mental health support and understanding during the 18th century were limited, leaving him vulnerable to emotional distress.

• Legacy:

• Despite his tragic end, Clive is remembered as a key architect of British imperialism in India, laying the foundation for nearly two centuries of British rule.

• His contributions remain a subject of debate, with critics highlighting his role in exploiting India, while others focus on his military and administrative accomplishments.

Important Points

• Battle of Plassey (1757): This battle marked the beginning of British control over Bengal and eventually much of India. Clive's victory over Nawab Siraj-ud-Daulah was a turning point in Indian history.

• Dual Administration: Clive introduced the system of dual administration in Bengal, where the British controlled revenue collection while the Nawab retained nominal authority.

• Parliamentary Inquiry: Clive faced intense scrutiny in the British Parliament, leading to significant stress and a tarnished public image, despite his acquittal.

• Influence on British Imperialism: Clive's policies and victories laid the groundwork for the expansion of British influence in India, making him a pivotal figure in colonial history.

Q97. Answer: (c) Third

The correct answer is Third.

Key Points

• The Third Reading in the context of the Indian Parliament is the final stage of the legislative process where the Bill is discussed for its passage.

• During this stage, the focus is on the motion that the Bill, either in its original or amended form, should be passed. No new amendments are introduced at this stage.

• The discussion in the Third Reading is typically brief and revolves around the overall merits and implications of the proposed legislation.

• Members of Parliament (MPs) vote on the Bill at the end of the Third Reading, and it is either passed or rejected.

• If the Bill is passed by one House of Parliament (Lok Sabha or Rajya Sabha), it is sent to the other House for consideration and approval.

• The Third Reading ensures that the Bill aligns with its intended purpose and has undergone thorough scrutiny in the prior stages (First and Second Readings).

Additional Information

• First Reading:

• This is the introductory stage where the Bill is formally introduced in either the Lok Sabha or Rajya Sabha.

• There is no detailed discussion on the Bill at this stage. The objective is to present the Bill and seek permission to proceed with it.

• Once introduced, the Bill is published in the Gazette of India to inform the public and legislators.

• Second Reading:

• This stage involves a detailed examination of the Bill. The Second Reading is divided into two sub-stages:

1. General Discussion: Members discuss the principles and objectives of the Bill.

2. Clause-by-Clause Examination: Each provision of the Bill is reviewed, and amendments may be proposed and debated.

• The Bill may also be referred to a Parliamentary Committee for further scrutiny during this stage.

• Voting Process:

• At the end of the Third Reading, members vote on the Bill. Voting can be conducted through voice vote, division vote, or electronic voting, depending on the circumstances.

• If the Bill is approved in its current or amended form, it proceeds to the next legislative step, such as approval by the other House or assent by the President.

• Legislative Process in India:

• The legislative process in India follows a structured framework defined by the Constitution and parliamentary rules.

• It includes various stages such as drafting, introduction, readings, voting, and presidential assent before a Bill becomes an Act.

• This process ensures transparency, accountability, and inclusivity in lawmaking.

YourMockTest.com — Free Study Material

Important Points

• Role of the President:

• Once a Bill is passed by both Houses of Parliament, it is sent to the President for assent.

• The President can approve the Bill, withhold assent, or return it for reconsideration (except in the case of Money Bills).

• Once the President gives assent, the Bill becomes an Act and is enforceable as law.

• Money Bills and Third Reading:

• Money Bills, as defined under Article 110 of the Constitution, deal with financial matters like taxation and public expenditure.

• These Bills can only be introduced in the Lok Sabha, and the Third Reading ensures their alignment with national financial policies.

• Role of Parliamentary Committees:

• During the legislative process, Bills may be referred to Parliamentary Committees for in-depth examination and recommendations.

• This ensures that laws are comprehensive, effective, and aligned with the needs of the people.

Q98. Answer: (b) Lipase

The correct answer is Lipase.

Key Points

• Lipase is an enzyme secreted by the pancreas that plays a crucial role in the digestion of emulsified fats in humans.

• Emulsified fats are broken down into smaller fat molecules by bile salts, which are produced by the liver and stored in the gallbladder before lipase acts on them.

• Pancreatic lipase specifically hydrolyzes triglycerides into monoglycerides and free fatty acids, making them absorbable by the small intestine.

• Lipase is active in the small intestine, where it interacts with fat molecules and bile salts to facilitate digestion.

• The secretion of lipase is stimulated by the presence of fats in the small intestine, and its activity is essential for fat metabolism and energy production.

• Bile salts, although not enzymes, aid lipase in emulsifying fats and increasing the surface area for enzymatic action.

Additional Information

• Amylase:

• Amylase is another enzyme produced by the pancreas, but it is responsible for digesting carbohydrates, not fats.

• It breaks down complex carbohydrates like starch into simpler sugars such as maltose and glucose.

• Amylase is active in the mouth (salivary amylase) and the small intestine (pancreatic amylase).

• It does not play a role in the digestion of emulsified fats.

• Trypsin:

• Trypsin is a pancreatic enzyme that aids in the digestion of proteins, not fats.

• It converts proteins into smaller peptides and amino acids in the small intestine.

• Trypsin is activated from its inactive precursor, trypsinogen, by the enzyme enteropeptidase.

• It works optimally in the alkaline environment of the small intestine.

• Lactase:

• Lactase is an enzyme primarily involved in the digestion of lactose, the sugar found in milk.

• It breaks down lactose into glucose and galactose for absorption in the small intestine.

• Lactase deficiency leads to lactose intolerance, causing difficulty in digesting dairy products.

• It is produced by the cells lining the small intestine but has no role in fat digestion.

• Pancreatic Enzyme Functions:

• The pancreas secretes a variety of enzymes, including lipase, amylase, and trypsin, essential for the digestion of fats, carbohydrates, and proteins.

• These enzymes are produced in the exocrine part of the pancreas and released into the small intestine via the pancreatic duct.

• Optimal digestion relies on the coordinated action of enzymes and bile salts in the gastrointestinal tract.

Important Points

• Role of Bile Salts:

• Bile salts emulsify fats, increasing their surface area for enzymatic action by lipase.

• They are produced by the liver and stored in the gallbladder, playing a key role in fat digestion.

• Fat Absorption:

• After digestion by lipase, monoglycerides and free fatty acids are absorbed in the small intestine.

YourMockTest.com — Free Study Material

• The absorbed fats are reassembled into triglycerides and transported via lymphatic vessels as chylomicrons.
• Clinical Relevance:
• Deficiency of lipase can lead to disorders such as fat malabsorption and steatorrhea (fatty stools).
• Pancreatic enzyme supplements may be prescribed for individuals with pancreatic insufficiency.
• Energy Production:
• Digested fats provide a concentrated source of energy, yielding more calories per gram than proteins or carbohydrates.
• Fats are stored in the form of triglycerides in adipose tissue for long-term energy use.

Q99. Answer: (c) Both I and II

The correct answer is Both I and II.

Key Points

• Old xylem, also known as heartwood, serves as a storage site for waste products in plants.
• Resins are complex chemical substances secreted by plants, which are often stored in the old xylem. These substances help in sealing wounds and protecting the plant from pathogens. Hence, this statement is correct.
• Gums are water-soluble substances produced by plants, usually as a response to injury or infection. They are also stored in the old xylem. Hence, this statement is correct.
• Both resins and gums serve as defense mechanisms for plants, helping them deal with environmental stress and microbial attacks.
• The accumulation of these substances in the old xylem does not interfere with the plant's physiological processes, as the old xylem is no longer active in water conduction.
• Thus, the correct answer is that both resins and gums are stored in the old xylem of plants.

Additional Information

• Heartwood and Sapwood:
• Heartwood is the older, non-living central wood of a tree. It is darker in color due to the accumulation of secondary metabolites like resins, gums, and tannins.
• Sapwood, on the other hand, is the younger, outer portion of the wood that is active in water and nutrient conduction.
• Functions of Resins:
• Resins protect plants by sealing wounds and deterring herbivores and pathogens.
• They are used commercially in products such as varnishes, adhesives, and incense.
• Functions of Gums:
• Gums help in wound healing and act as a barrier against microbial infection.
• They are widely used in industries for making adhesives, medicines, and food additives.
• Examples of Plants Producing Resins and Gums:
• Resin-producing plants: Pine trees (Pinus species).
• Gum-producing plants: Acacia species (e.g., gum arabic).
• Role of Old Xylem:
• Old xylem, or heartwood, is no longer involved in water conduction but provides structural support to the plant.
• It acts as a reservoir for waste products, preventing their accumulation in active tissues.

Important Points

• Waste Storage in Plants: Plants often store metabolic waste products in non-functional tissues like old xylem, bark, or leaves, which later shed off.
• Commercial Importance: Both resins and gums have significant economic value and are used in various industries, including pharmaceuticals, food, and manufacturing.
• Ecological Role: These substances help plants survive in adverse conditions by providing mechanical protection and reducing water loss.

Q100. Answer: (d) an assembly or "meeting together" of Tamil poets

The correct answer is an assembly or "meeting together" of Tamil poets.

Key Points

• The term Sangam refers to the gathering or assembly of Tamil poets during the Sangam Age, which is a historically significant period in South Indian history.
• The Sangam assemblies were held to compile, critique, and refine Tamil literature, showcasing the cultural and literary richness of the Tamil people.
• The Sangam Age is believed to span roughly from 300 BCE to 300 CE, covering the early historic period of Tamilakam.

YourMockTest.com — Free Study Material

• These assemblies are said to have taken place under the patronage of the Tamil kings, primarily the Cheras, Cholas, and Pandyas, who supported poets and scholars.

• The Sangam literature includes works on various themes such as love, war, ethics, and governance, providing valuable insights into the socio-political and cultural aspects of the era.

Additional Information

• Sangam Literature:

• The Sangam corpus consists of works such as Pathupattu (Ten Idylls), Ettuthogai (Eight Anthologies), and Thirukkural, among others.

• These texts are written in classical Tamil and are considered some of the oldest extant Tamil literature.

• The literature is divided into two categories: Akam (inner, dealing with love and personal emotions) and Puram (outer, focusing on war, politics, and society).

• Patronage by Tamil Kings:

• The Sangam assemblies were supported by rulers such as the Pandya kings, who are said to have hosted these gatherings in Madurai.

• The kings provided financial and moral support to poets and scholars, fostering the growth of Tamil literature.

• Significance of Sangam Age:

• The Sangam Age is crucial for understanding the early history and culture of South India.

• It provides details about trade, agriculture, social hierarchy, and religious practices during the time.

• It highlights the maritime trade links between South India and regions such as Rome, Greece, and Southeast Asia.

• Historical Context:

• The Sangam Age corresponds to the period when Tamilakam was divided among the Cheras, Cholas, and Pandyas.

• The Sangam texts are also valuable for reconstructing the political history of these kingdoms.

Important Points

• Legend of Three Sangams:

• According to Tamil legends, there were three Sangams, held in succession over thousands of years.

• The first Sangam was held in South Madurai, the second in Kapatapuram, and the third in Madurai.

• While the first two Sangams are considered mythical, the third is believed to have historical basis.

• Sangam Literature Themes:

• The literature covers a wide range of topics, including heroic deeds, ethical values, and romantic expressions.

• It reflects the life, culture, and aspirations of the Tamil-speaking people during the Sangam Age.

• Impact on Tamil Culture:

• The Sangam literature continues to influence Tamil culture, language, and identity.

• It serves as a source of pride and inspiration for the Tamil community worldwide.

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

YourMockTest.com — Free Study Material