RRB NTPC UG Memory Based Mock (12 Aug Exam)

Q1. After Swami Dayanand Saraswati's death, in which city did his followers establish the Dayanand Anglo Vedic Schools?
(a) Karachi
(b) Delhi
(c) Lahore
(d) Bombay

Q2. Which of the following devices is based on the principles of electromagnetic induction?
(a) Electric motor
(b) Electric fan
(c) Electric bulb
(d) Electric generator

Q3. Which of the following memories must be refreshed many times per second?
(a) Static RAM
(b) Dynamic RAM
(c) EPROM
(d) ROM

Q4. Who is known as the father of Blue Revolution in India?
(a) Verghese Kurien
(b) Sam Pitroda
(c) Hiralal Chaudhary
(d) M.S. Swaminathan

Q5. A Non-Banking Financial Company (NBFC) is a company registered under the _____.
(a) RBI Act, 1934
(b) Company Act, 1956
(c) NBFC Act, 1956
(d) Government Securities Regulation, 1913

Q6. Which is a central problem of an economy?
(a) Allocation of resources
(b) Optimum utilisation of resources
(c) Economic development
(d) All of these

Q7. In amoeba food is digested in the:
(a) Food vacuole
(b) Mitochondria
(c) Pseudopodia
(d) Chloroplast

Q8. Which law describes the orbits of planets around the sun?
(a) Newton's law
(b) Faraday's law
(c) Kepler'slaw
(d) Kirchoff's law

Q9. Which of the following is not a true amphibian animal?
(a) Tortoise
(b) Frog
(c) Toad
(d) Salamander

Q10. Which of the following is/are linked with the financial sector of India and controlled by the Reserve Bank of India (RBI)?
(a) Commercial Bank
(b) Moncy lenders
(c) Stock exchange operations
(d) All of the above

Q11. Which of the following rivers is NOT a tributary of River Brahmaputra?
(a) Subansiri
(b) Lohit
(c) Gandak
(d) Manas

Q12. Koraput, Rayagada, Kalahandi, Balangir districts of Odisha are famous for which mining mineral?
(a) Bauxite
(b) Limestone
(c) Copper
(d) Mica

Q13. Which of the following articles was added to the Indian Constitution through the 97th Constitutional Amendment Act of 2011?
(a) Article 151
(b) Article 43B
(c) Article 127
(d) Article 51

Q14. Which of the following languages is/are spoken in Meghalaya?
1) Kokborok
2) Garo
3) Khasi
(a) 2 and 3 only
(b) 1 and 2 only
(c) 1,2 and 3 only
(d) 1 and 3 only

Q15. _____a Rashtrakuta chief overthrew his Chalukya overlord and performed a ritual called hiranya-garbha (literally, the golden womb).
(a) Dantidurga
(b) Rajendra
(c) Nagbhatta
(d) Rajraja

Q16. ROM stands for :
(a) Read On Memory
(b) Read Only Memory
(c) Random On Memory
(d) Random Only Memory

Q17. Basaveshwara established which revolutionary institution to promote spiritual dialogue and social equality?
(a) Nalanda Mahavihara
(b) Anubhava Mantapa
(c) Takshashila
(d) Varanasi Gurukul

Q18. Who among the following wrote Gulamgiri?
(a) Bal Gangadhar Tilak
(b) Mahatma Gandhi
(c) BR Ambedkar
(d) Jyotiba Phule

Q19. Which of the following is not a correct option available for writing sender's email in any emailing tool/software?
(a) to
(b) tcc
(c) bcc
(d) cc

Q20. Which shortcuts is used to paste the selected text?
(a) Ctrl + P
(b) Ctrl + J
(c) Ctrl + V
(d) Ctrl + I

Q21. The contents of information are stored in?
(a) Memory Data Register
(b) Memory Address Register
(c) Memory Arithmetic Registers
(d) Memory Access Register

Q22. Which organization released the Technology and Innovation Report 2025?
(a) World Bank
(b) World Economic Forum
(c) United Nations Conference on Trade and Development (UNCTAD)
(d) International Telecommunication Union (ITU)

Q23. 'Charkula' and 'Dadra' are the dance forms of which state?
(a) Gujarat
(b) Maharashtra
(c) Uttar Pradesh
(d) Tamil Nadu

Q24. Which Article, under the Constitution of India, empowers the Government of India to levy and collect Goods and Services Tax ?
(a) Article 266
(b) Article 268A
(c) Article 269A
(d) Article 271A

Q25. Under which among the following Articles of the Constitution is the President's rule promulgated on any State in India ?
(a) 356
(b) 370
(c) 326
(d) 380

Q26. What is the theme for World Homeopathy Day 2025?
(a) Integrative Healthcare and Holistic Healing
(b) Enhancing Global Homeopathy Reach
(c) Adhyayan, Adhyaapan, Anusandhaan – Education, Practice and Research
(d) Homeopathy for a Healthier Tomorrow

Q27. Which of the following Articles of the Indian Constitution deals with special provisionsthat have been provided to some states?
(a) Article 444
(b) Article 290
(c) Article 356
(d) Article 371

Q28. When is Swaminarayan Jayanti 2025 celebrated?
(a) 6th April 2025
(b) 7th April 2025
(c) 5th April 2025
(d) 8th April 2025

Q29. Articles 344 (1) and 351 of the Constitution of India are related to the:
(a) Third Schedule
(b) Sixth Schedule
(c) Fifth Schedule
(d) Eighth Schedule

Q30. Where was the 37th Kathak Mahotsav 2025 successfully concluded?
(a) Mumbai
(b) Lucknow
(c) Jaipur
(d) New Delhi

Q31. As per the notification issued by the Ministry of Rural Development (MoRD) in March 2025, what is the revised daily wage under MGNREGA for FY 2025–26?
(a) Rs 349
(b) Rs 360
(c) Rs 370
(d) Rs 400

Q32. Match the dances in column A with their states in column B.

Column A (Dances)	Column B (States)
1. Bharatanatyam	a. Gujarat
2. Mohiniattam	b. Tamil Nadu
3. Garba	c. Kerala
4. Sattriya	d. Assam

(a) 1-c, 2-b, 3-a, 4-d
(b) 1-a, 2-c, 3-b, 4-d
(c) 1-b, 2-c, 3-d, 4-a
(d) 1-b, 2-c, 3-a, 4-d

Q33. Who has been awarded the Abel Prize 2025?
(a) Terence Tao
(b) Peter Scholze
(c) Maryna Viazovska
(d) Masaki Kashiwara

Q34. Who is the leading wicket-taker in the ICC Champions Trophy 2025?
(a) Varun Chakaravarthy
(b) Mohammad Shami
(c) Matt Henry
(d) Mitchell Santner

Q35. Who launched the 'BHARATPOL' portal on January 7, 2025?
(a) Narendra Modi
(b) Amit Shah
(c) Nirmala Sitharaman
(d) Rajnath Singh

Q36. Which of the following is known as the highest battlefield of the world?
(a) Nanda Devi glacier
(b) Siachin glacier
(c) Rathong galcier
(d) Gangotri glacier

Q37. Who was elected as the first female President of Namibia in 2024?
(a) Samia Suluhu Hassan
(b) Joyce Banda
(c) Ellen Johnson Sirleaf
(d) Netumbo Nandi-Ndaitwah

Q38. Where was the 13th edition of Exercise Agni Warrior (XAW-2024) conducted?
(a) Pokhran, Rajasthan
(b) Devlali, Maharashtra
(c) Jaisalmer, Rajasthan
(d) Pune, Maharashtra

Q39. What significant milestone is Hockey India celebrating in 2025?
(a) 50 years of establishment
(b) 75 years of independence
(c) 100 years of Indian hockey
(d) 25 years of Men's Hockey League

Q40. The Bardoli Satyagraha took place in which year?
(a) 1924
(b) 1926
(c) 1928
(d) 1922

Q41. The product of$\sqrt{22}$ and$\sqrt{33}$ is:
(a) a rational number
(b) sometimes a rational number and sometimes an irrational number
(c) equal to 4
(d) an irrational number

Q42. A student's overall grade is determined by their scores in three subjects: Mathematics, English, and Science, with weights of 40%, 30%, and 30%, respectively. If the student scores 80, 90, and 75 in these subjects, respectively, the overall grade of the student is:
(a) 82
(b) 81.5
(c) 82.5
(d) 81

Q43. Let PQR be a right angled triangle, right-angled at R. Let PQ = 29 cm, QR = 21 cm and $\angle Q = \theta$. Find the value of$\cos 2\cos 2\theta - \sin 2\sin 2\theta$.
(a) 4084084040
(b) 8404040840
(c) 4184184141
(d) 8414141841

Q44. The average age of Raj and his father is 45 years. If the ages of the father and the grandfather of Raj are respectively two and three times that of Raj, then the age of Raj's grandfather is
(a) 75 years
(b) 90 years
(c) 81 years
(d) 84 years

Q45. The population of a place increased to 50,000 from 2016 to 2018 at the rate of 6% per annum, and continued the same trend for the next 3 years. If A is the population in 2016 and B is the population in 2020, both are approximated to the next possible integers,then the value of B – A is:
(a) 11680
(b) 16270
(c) 13220
(d) 12850

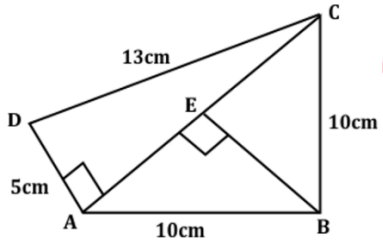
Q46. What should be added to each term of the ratio 5: 11 so that the ratio becomes 3:5?
(a) 6
(b) 4
(c) 2
(d) 5

Q47. Vessel A contains milk and water in the ratio 4 : 5. Vessel B contains milk and water in the ratio 2 : 1. If x litres mixture of A is mixed with y litres mixture of B, then the ratio of milk to water in the mixture becomes 8 : 5. Find the ratio x : y.
(a) 3 : 10
(b) 5 : 6
(c) 2 : 5
(d) 3 : 4

Q48. The cost price of a fan is 4,400. A merchant wants to make a 24% profit by selling it. At the time of sale, merchant declares a discount of 12% on the marked price. Find the marked price.
(a) Rs. 2,600
(b) Rs. 2,060
(c) Rs. 6,200
(d) Rs. 6,020

Q49. A bag contains 1 rupee, 50-paise and 25-paise coins in the ratio 3 : 4 : 6. If the total amount is ₹143, the number of 50-paise coins is:
(a) 66
(b) 90
(c) 88
(d) 132

Q50. What is the area of a quadrilateral ABCD, (shown below) in which sides AB and BC are equal, sides AD and CD are of lengths 5 cm and 13 cm, respectively, and side AD is perpendicular to the diagonal AC?



(a) 75 cm^2
(b) 78 cm^2
(c) 82 cm^2
(d) 80 cm^2

Q51. A work can be finished by 8 men in 10 days working 6 hours a day or same can be finished by 20 qualified workers in 6 days working 8 hours a day. 2 men and 4 qualified workers work simultaneously 10 hours a day, the work will be finished in _____ days.
(a) 9
(b) 10
(c) 12
(d) 8

Q52. Shopkeeper A marks up his price for an item at 25% and offers a discount of 15%. The same item is marked at 20% by another shopkeeper B and sold at a discount of 12%. Who gets a better deal in terms of % profit and by what profit percentage he sells that item?
(a) B by 5.6%
(b) B by 0.65%
(c) A by 0.55%
(d) A by 6.25%

Q53. In an isosceles triangle ABC, AB=AC. D is a point inside the triangle such that ∠BAD = 20° = ∠DCB, ∠CAD = 80°. The value of ∠ABC is:
(a) 25°
(b) 15°
(c) 20°
(d) 40°

Q54. If the radius of a sphere is increased by 2 cm, its surface area increases by 704 cm2m2. What was the radius of the sphere before the increase? (Use π =22/7)
(a) 12 cm
(b) 14 cm
(c) 11 cm
(d) 13 cm

Q55. Two trains, A and B started travelling towards each other at the same time, from places P to Q and Q to P, respectively. After crossing each other, A and B took 9 hours and 16 hours to reach Q and P, respectively. If the speed of A was 56 km/h, then what was the speed (in km/h) of B?
(a) 38
(b) 42
(c) 40
(d) 46

Q56. The height of one cone is 3 times the height of another cone, while its radius is half of the radius of other cone. If their total volume is 100 unit3,t3, then the difference in the volumes of the cones is _____ $unit^3$.
(a) 13.4
(b) 15.5
(c) 14.3
(d) 12.5

Q57. Find the altitude (in cm) of side MT of triangle MNT with side MN = 36 cm, MT = 36 cm and NT = 48 cm.
(a) 1655
(b) 1833
(c) 1255
(d) 2433

Q58. Simplify the given expression. $\frac{[1.5\times1.5\times1.5+2.7\times2.7\times2.7+4.8\times4.8\times4.8-3\times1.5\times2.7\times4.8]}{[1.5\times1.5+2.7\times2.7+4.8\times4.8-1.5\times2.7-2.7\times4.8-4.8\times1.5]}$
(a) 10
(b) 12
(c) 14
(d) 9

Q59. A sum of money becomes five times its original value in 15 years when invested at a certain simple interest rate. If the sum was invested twice the time at the same rate of interest, what would be the final amount?
(a) The money becomes 7 times its original value
(b) The money becomes 9 times its original value
(c) The money becomes 6 times its original value
(d) The money becomes 8 times its original value

Q60. Three people, A, B and C, invest in a business in the ratio 2 : 3 : 5. It was decided that 9% of the profits will go to charity. Ifthe total profit was ₹2,50,000, then find the share of C in the profit (in ₹).
(a) 1,26,950
(b) 1,11,650
(c) 1,21,850
(d) 1,13,750

Q61. A theater sold 500 tickets to a concert. The tickets for adults cost $20 each, and the tickets for children cost $12 each. If the total revenue was $8,000, how many adult tickets were sold?
(a) 200
(b) 250
(c) 350
(d) 300

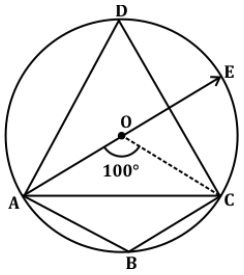
Q62. If 330 persons can complete the construction of a shopping complex in 50 days, how many persons are required to complete the same work in 30 days?
(a) 550
(b) 450
(c) 198
(d) 505

Q63. The greatest value of$\sin 4\theta+\cos 4\theta \sin 4\theta+\cos 4\theta$ is:
(a) 2
(b) 1
(c) 3
(d) 4

Q64. After the division of a number successively by 2,3 and 5, the remainders are 1,2 and 3, respectively. What will be the remainder, if 13 divides the same number (if the last quotient is 1)?
(a) 1
(b) 2
(c) 0
(d) 3

Q65. If a circle whose centre is (2, 3) touches the line 4x + 3y - 7 = 0, then the radius of the circle is:
(a) 4 unit
(b) 1 unit
(c) 2 unit
(d) 3 unit

Q66. In the given figure, O is the centre of the circle, AE is the diameter and ∠AOC = 100°.



The value of ∠CDE + ∠CEA is:
(a) 90°
(b) 80°
(c) 60°
(d) 100°

Q67. If $\alpha + \beta = 45°$ and $(\tan \alpha + 1)(\tan \beta + 1) = 2x$ then x is:
(a) 2
(b) −1
(c) 0
(d) 1

Q68. What is the average of all the natural numbers from 1 to 59?
(a) 29.5
(b) 31
(c) 30.5
(d) 30

Q69. Naman bought few apples for Rs. 720 from a shop. He negotiated the price and the shopkeeper reduced it by Rs. 2 per apple. Due to this Naman could buy four more apples than what he had bought earlier. How many apples did he originally buy?
(a) 48
(b) 44
(c) 36
(d) 40

Q70. If 0.4x + 0.16y = 1.7 and 0.3x + 0.12y = 3.4, then which of the following is correct?
(a) The system has finitely many solutions but not unique.
(b) The system has infinitely many solutions.
(c) The system has no solution.
(d) The system has unique solution.

Q71. If '+' and '÷' are interchanged and '-' and '×' are interchanged, then what will come in place of the question mark (?) in the following equation?
15 × 2 - 48 + 4 ÷ 5 = ?
(a) −9
(b) −4
(c) 8
(d) 4

Q72. If '+' means '-', '-' means '×', '×' means '÷' and '÷' means '+', then what will come in place of the question mark (?) in the following equation?
98 × 14 + 6 ÷ 36 - 8 = ?
(a) 290
(b) 287
(c) 289
(d) 288

Q73. The position(s) of how many letters will remain unchanged if each letter in the word DELIGHT is arranged in the English alphabetical order?
(a) Three
(b) Two
(c) Four
(d) One

Q74. Amit is facing North. He first turns left, then again turns left, then he turns right and again turns right. In which direction is Amit facing now?
(a) East
(b) North-east
(c) North
(d) South-east

Q75. The position(s) of how many letters will remain unchanged if each of the letters in the word ACTIVITY is arranged in reverse English alphabetical order?
(a) Three
(b) Four
(c) One
(d) Two

Q76. If in a code language CLASS is written as 81 and SECTION is written as 104, then how will COLLEGE be written in the same language?
(a) 130
(b) 123
(c) 143
(d) 134

Q77. In a certain code language, 'finish the water' is coded as 'mb tk zb' and 'water or juice' is coded as 'kj zb bm'. How is 'water' coded in the given language?
(a) zb
(b) tk
(c) mb
(d) kj

Q78. Based on the English alphabetical order, three of the following four letter-clusters arealike in a certain way and thus form a group. Which letter-cluster DOES NOT belong tothat group?(Note: The odd one out is not based on the number of consonants/vowels or theirposition in the letter-cluster.)
(a) JIF
(b) TSP
(c) POL
(d) KJH

Q79. In the fictional country of Vegereversia, which of the following provinces is the odd one out?
(a) PANGOTATOP
(b) SULTORRAC
(c) HIABIGOHON
(d) SINNEGABBAC

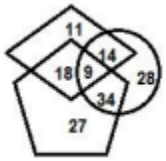
Q80. If GO=32, SHE=49, then SOME will be equal to:
(a) 56
(b) 58
(c) 62
(d) 64

Q81. In a certain code language, 'eat more fruits' is coded as 'lo tk jo' and 'fruits are expensive' is coded as 'jo bk mb'. How is 'fruits' coded in the given language?
(a) tk
(b) jo
(c) mb
(d) lo

Q82. Pointing to a woman, William said, "Her only sister is the mother of my, daughter's mother". How is the woman related to William?
(a) Sister
(b) Mother
(c) Grandmother
(d) Aunt

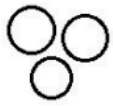
Q83. Rahul walks in East direction for 70 Kms. After that he turns to West direction and walks for another 10 Kms and finally he turns to South direction and walks for 11 Kms. How far is he from the starting point and which direction is he with respect to the starting point?
(a) 91 Kms, South-West
(b) 61 Kms, South-East
(c) 81 Kms, South-East
(d) 71 Kms, South-West

Q84. In the following Venn diagram, the 'pentagon' stands for 'sailors", the 'circle stands for females', and the 'rhombus' stands for Illiterate". The given numbers represent the numbers of persons in that particular category. How many female sailors are NOT illiterate?

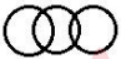


(a) 28
(b) 34
(c) 9
(d) 14

Q85. Select the Venn diagram that best illustrates the relationship between the following classes.
Mothers, Sales Managers, Males

(a) 

(b) 

(c) 

(d) 

Q86. P, Q, R, S, T, U and V are sitting around a circular table facing the centre. Only two people sit between S and V when counted from the left of V. T sits third to the left of U. P sits to the immediate right of U. P sits second to the left of S. Q is an immediate neighbour of T. How many people sit between R and V when counted from the right of V?
(a) 1
(b) 3
(c) 2
(d) 4

Q87. Select the option that is related to the third word in the same way as the second word is related to the first word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)
Sugar : Diabetes :: Fat : _____
(a) Insomnia
(b) Obesity
(c) Thyroid
(d) Lethargy

Q88. Select the pair from among the given options that is analogous to the given pair.
9 : 725
3 : 23
(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.)
(a) 8 : 315
(b) 5 : 128
(c) 4 : 60
(d) 6 : 220

Q89. Select the triad from among the given options that is analogous to the given triad.
339 – 663 – 555
348 – 636 – 555
(a) 164 – 542 – 614
(b) 195 – 285 – 348
(c) 161 – 512 – 710
(d) 432 – 513 – 711

Q90. Choose the incompatible in the following.
(a) lion : den
(b) bird : nest
(c) cat : meow
(d) bee : hive

Q91. Two statements are given followed by two conclusions I and II. You have to take these statements to be true even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follows from the given statements.
Statements:
1. All crows are brains.
2. No hawk is a falcon.
Conclusions:
I. All crows are falcons.
II. Some falcons are hawks.
(a) Only conclusion I follows.
(b) Only conclusion II follows.
(c) Both conclusions I and II follows.
(d) Neither conclusion I nor II follows.

Q92. What is the number of regular pentagons in the following figure?

(a) 5
(b) 6
(c) 8
(d) 10

Q93. What will come in the place of '?' in the following equation, if '÷' and '–' are interchanged and '×' and '+' are interchanged?
36 × 104 – 13 + 8 ÷ 38 = ?
(a) 42
(b) 72
(c) 52
(d) 62

Q94. Seven people, A, B, C, D, E, F and G are sitting in a row, facing north. Only three people sit between E and B. G sits to the immediate left of B. No one sits to the right of D. Only two people sit between D and G. C sits to the immediate right of A. How many people sit to the right of B?
(a) 3
(b) 1
(c) 4
(d) 2

Q95. Pointing towards a boy, Veena said, "He is the son of only son of my grandfather". How is that boy related to Veena?
(a) Uncle
(b) Brother
(c) Cousin
(d) Data inadequate

Q96. A stands in the 13th position from the front of the queue and there are 2 persons between A and B. B stands after A. If the first 8 persons are removed from the queue then what is the position of B from the front of the queue?
(a) 5
(b) 8
(c) 7
(d) 6

Q97. There are seven persons Prakash, Nilanjan, Rohit, Jay, Saman, Sanjay and Veer whose ages are 55, 34, 56, 42, 36, 30 and 25 (all in years) but not necessarily in same order.
• Rohit who is elder brother of Jay and younger than Nilanjan.
• Sanjay is only younger than Veer but older than Saman.
• Nilanjan is the younger brother of Prakash who is 4th youngest as well as 4th oldest among group.
Which of the following statement is true based on the above information?
I. Saman age is 42 years
II. Jay is youngest in all.
(a) Both I and II
(b) Only I
(c) Neither I nor II
(d) Only II

Q98. If we interchange "+" with "–" and "÷" with "×", then what is the value of the below expression?
39 × 3 + 10 – 13 ÷ 2
(a) 3
(b) 17
(c) 29
(d) 31

Q99. A certain number of class XII students are standing together; each are of different weights. When their weights are compared, Adya is heavier than Dilipa. but lighter than Fiya. Charu is lighter than Esha and heavier than Bidan, who is heavier than Fiya. Only one student is heavier than Esha. Only two students are lighter than Dilipa. If no other student is part of the group, what is the total number of students in the group?
(a) Seven
(b) Six
(c) Nine
(d) Ten

Q100. Seven businessmen G, H, I, J, K, L and M, travelled in the same month on different dates 4th, 8th, 11th, 14th, 17th, 22nd and 28th (but not necessarily in the same order). L travelled the last. K travelled just after I but before J.K travelled on the 11th. Only two people travelled between K and M. Exactly one person travelled between G and K, and K travelled after G. On which date did M travel?
(a) 22nd
(b) 4th
(c) 28th
(d) 17th

Solutions

S1. Ans.(c)
Sol. The correct answer is: (c) Lahore
Explanation:
After the death of **Swami Dayanand Saraswati** in **1883**, his followers established the **Dayanand Anglo-Vedic (DAV) Schools** to promote **modern education** along with **Indian values**.
The first of these schools was established in **Lahore** (now in Pakistan) in **1886** by his close associate, **Lala Hansraj**.
Information Booster:
- The DAV schools aimed to spread **western education** while preserving **Indian culture** and **values**.
- The DAV schools have since grown into a large network of schools across India and are known for promoting **education** based on **Arya Samaj** values.
- **Swami Dayanand Saraswati** was a prominent social reformer and the founder of the **Arya Samaj**, which advocated for the reform of Hindu society through education and the promotion of **Vedic principles**.

Additional Information:
- **Karachi**: The city where the **first Arya Samaj** was established.
- **Delhi**: Although **Delhi** is an important center for the Arya Samaj movement.
- **Bombay**: While **Bombay (Mumbai)** has had significant influence from reform movements.

S2. Ans.(d)
Sol. The correct answer is:(d) Electric generator
Explanation:
- An **electric generator** works on the principle of **electromagnetic induction**, where **mechanical energy is converted into electrical energy** by rotating a coil in a magnetic field, thereby inducing current.

Information Booster:
- Principle discovered by **Michael Faraday** in **1831**.
- **Faraday's Law**: EMF is induced when magnetic flux through a coil changes.
- Used in **power stations** to generate electricity.
- AC and DC generators differ in **current type** produced.
- Induced current's direction is given by **Fleming's Right-Hand Rule**.
- Generators are crucial for producing large-scale electricity for grids.

Additional Information:
- **Electric motor**: Converts **electrical energy to mechanical**, works on motor principle, not induction.
- **Electric fan**: Contains a motor, hence not based directly on electromagnetic induction.
- **Electric bulb**: Produces light from electrical energy via **resistance heating**, no magnetic component involved.

S3. Ans.(b)
Sol. Dynamic RAM (DRAM) stores data using capacitors that tend to discharge over time. To preserve the data, DRAM must be **refreshed thousands of times per second** by rewriting the information continuously.
Important Key Points:
1. DRAM is **volatile** and needs frequent refreshing.
2. It is cheaper and denser than Static RAM.
3. Commonly used in **main memory (RAM)** in computers.
4. Refreshing is handled automatically by the **memory controller**.

Knowledge Booster:
•→**Static RAM (SRAM)** does not require refreshing and is faster but costlier.
•→**EPROM** and **ROM** are non-volatile and don't require refreshing.

S4. Ans.(c)
Sol. The correct answer is (c) Hiralal Chaudhary.
- Hiralal Chaudhary is known as the father of the Blue Revolution in India.
- He played a pioneering role in developing and promoting fisheries and aquaculture in India.
- The Blue Revolution refers to the significant increase in fish production through improved fish farming and aquaculture practices.

Information Booster:
- The Blue Revolution helped India become the second-largest fish producer globally.
- It focuses on sustainable fisheries, aquaculture technology, and management.
- This revolution contributed to rural employment and nutrition improvement.
- Verghese Kurien is known as the father of the White Revolution (milk production).
- M.S. Swaminathan is known as the father of the Green Revolution (agriculture).
- The Blue Revolution began in the 1970s with government support and scientific advances.
- Fish production increased via techniques like hatchery development and water resource management.

Additional Information:
- **Verghese Kurien:** Father of White Revolution (dairy).
- **Sam Pitroda:** Telecom pioneer, not related to fisheries.
- **M.S. Swaminathan:** Father of Green Revolution (crop production).

S5. Ans.(b)
Sol. The correct answer is (b) Company Act, 1956.
- NBFCs are companies registered under the Companies Act, 1956 (now replaced by Companies Act, 2013).
- They are regulated by the Reserve Bank of India (RBI) but are not banks as they do not hold a banking license.
- NBFCs provide financial services like loans, credit facilities, and asset financing but cannot accept demand deposits.

Information Booster:
- NBFCs play a vital role in financial inclusion and credit delivery to unbanked sectors.
- Unlike banks, NBFCs cannot issue cheques or participate in payment systems.
- RBI regulates NBFCs under the Reserve Bank of India Act, 1934 for their financial operations.

- NBFCs are categorized into deposit-taking and non-deposit-taking entities.
- They must follow guidelines related to capital adequacy, fair practices, and customer protection.
- NBFCs contribute significantly to India's economy, especially in microfinance and vehicle loans.
- The Companies Act governs their registration and corporate governance framework.

S6. Ans.(a)
Sol. The correct answer is (a) Allocation of resources.
- The central problem of any economy is how to allocate scarce resources among unlimited wants.
- This involves deciding what to produce, how to produce, and for whom to produce.
- Proper allocation is essential because resources are limited while human wants are unlimited.

Information Booster:
- Scarcity of resources necessitates efficient allocation.
- Optimum utilization follows after resources are allocated.
- Economic development depends on proper resource allocation and utilization.
- Allocation decisions affect production, distribution, and consumption.
- Different economic systems solve allocation problems differently.
- Misallocation leads to wastage and inefficiency.
- Allocation impacts economic growth and standard of living.

Additional Information:
- **Optimum utilisation of resources:** Important but a result of allocation.
- **Economic development:** A broader goal influenced by allocation and utilization.
- **All of these:** Too broad; allocation is the fundamental problem.

S7. Ans.(a)
Sol. The correct answer is (a) Food vacuole.
- Amoeba engulfs food particles by pseudopodia forming a food vacuole.
- Inside the food vacuole, enzymes break down the food into simpler substances that the amoeba can absorb.
- Digestion occurs within this vacuole, making it the site of intracellular digestion.

Information Booster:
- Food vacuole is a membrane-bound sac containing ingested food.
- Enzymes from lysosomes fuse with the vacuole to digest the food.
- Digested nutrients diffuse into the cytoplasm for use.
- Mitochondria generate energy but do not digest food.
- Pseudopodia help in movement and capturing food but not digestion.
- Amoeba lacks chloroplasts as it is not photosynthetic.
- Food vacuole digestion is a characteristic of protozoans like amoeba.

Additional Information:
- **Mitochondria:** Powerhouse of the cell, not involved in digestion.
- **Pseudopodia:** Extensions for locomotion and capturing food.
- **Chloroplast:** Present in plants and some algae for photosynthesis, not in amoeba.

S8. Ans.(c)
Sol. The correct answer is (c) Kepler's law.
- Kepler's laws specifically describe the motion of planets around the sun.
- These laws include the shape of orbits (elliptical), the equal area law (planets sweep equal areas in equal times), and the relation between orbital period and distance.
- Newton's laws explain the forces causing these motions but Kepler's laws focus directly on the orbital paths and timing.

Information Booster:
- Kepler's First Law: Planets move in elliptical orbits with the sun at one focus.
- Kepler's Second Law: A line joining a planet and the sun sweeps equal areas in equal intervals of time.
- Kepler's Third Law: The square of the orbital period of a planet is proportional to the cube of the semi-major axis of its orbit.
- These laws were derived from precise astronomical observations by Tycho Brahe and formulated by Johannes Kepler.
- Newton later showed that his law of gravitation explains why Kepler's laws hold true.
- Kepler's laws laid the foundation for modern celestial mechanics and astronomy.
- They apply to all orbiting bodies, including moons and satellites, not just planets.

Additional Information:

- **(a) Newton's law:** Explains gravity and motion but is a broader set of laws, not specifically about planetary orbits.
- **(b) Faraday's law:** Concerns electromagnetic induction, unrelated to planetary motion.
- **(d) Kirchoff's law:** Pertains to electrical circuits and spectroscopy, not planetary orbits.

S9. Ans.(a)

Sol. The correct answer is: **A. Tortoise**

- **Tortoise** is a **reptile**, not an amphibian.
- It lives primarily on land and does not have an aquatic larval stage like amphibians.
- **Frog, Toad, and Salamander** are all true amphibians, meaning they can live both in water and on land and undergo metamorphosis from larval to adult forms.

Information Booster:

- **Amphibians**: Cold-blooded vertebrates that require a moist environment for survival and reproduction (e.g., Frog, Toad, Salamander).
- **Reptiles**: Cold-blooded vertebrates with scaly skin, lay eggs on land, and do not undergo metamorphosis (e.g., Tortoise, Snake).

Additional Information:

- Amphibians are considered environmental indicators due to their sensitivity to pollution and habitat changes.
- **Tortoises** have lungs and a hard shell for protection, adapted to terrestrial habitats only.

S10. Ans.(a)

Sol. Correct Answer:A - Commercial Bank

Explanation:

- The RBI regulates and supervises **Commercial Banks** under the **Banking Regulation Act, 1949**.

Information Booster:

- The RBI is India's central bank, responsible for monetary policy, banking supervision, and financial stability.

Additional Information:

- **(Money lenders):**Not directly regulated by RBI; governed by state laws.
- **(Stock exchange operations):**Regulated by **SEBI**, not RBI.
- **(All of the above):**Incorrect, as only Commercial Banks are directly controlled by RBI.

S11. Ans.(c)

Sol. The correct answer is:(c) Gandak

Explanation:

- **Gandak River** is a **tributary of the Ganga**, not the Brahmaputra. It originates in Nepal and flows through Bihar before merging with the Ganga near Patna.

Information Booster:

- **Subansiri**, **Lohit**, and **Manas** are **major tributaries** of the **Brahmaputra River**.
- **Subansiri** is the largest tributary of the Brahmaputra in terms of volume.
- **Lohit** joins the Brahmaputra in Assam near **Sadiya**.
- **Manas** is a trans-boundary river that originates in Bhutan.
- Brahmaputra flows through **Tibet (as Tsangpo)**, **India**, and **Bangladesh**.
- It is one of the **longest rivers in the world**, known for its **high sediment load**.

Additional Information:

- **Subansiri**: Originates in Tibet and enters India in Arunachal Pradesh.
- **Lohit**: Flows through Arunachal Pradesh and Assam; joins Brahmaputra at the easternmost point.
- **Gandak**: Originates from the Nepal Himalayas; joins Ganga in Bihar, not connected to Brahmaputra.

S12. Ans.(a)

Sol. The correct answer is:(a) Bauxite

Explanation:

- The districts of **Koraput, Rayagada, Kalahandi, and Balangir** in **Odisha** are rich in **bauxite reserves**, which is the **chief ore of aluminium**. These regions are part of the **Eastern Ghats mobile belt**, known for their mineral wealth.

Information Booster:

- Odisha is the **largest producer of bauxite** in India.
- **Panchpatmali Hills** in Koraput is a major bauxite mining area.

- **NALCO (National Aluminium Company Ltd.)** operates bauxite mines in Odisha.
- Bauxite is mainly used in the **aluminium industry**.
- It contains minerals like **gibbsite, boehmite, and diaspore**.
- Mining in tribal-dominated areas has raised concerns over **environmental and social impacts**.

Additional Information:

- **Limestone**: Found in Sundargarh and Bargarh districts of Odisha, mainly used in cement.
- **Copper**: Odisha has minor copper deposits, mainly in Mayurbhanj.
- **Mica**: Odisha has negligible mica production; major reserves are in Jharkhand, Bihar, and Andhra Pradesh.

S13. Ans.(b)
Sol. Correct Answer: (b) Article 43B
Explanation

- The **97th Constitutional Amendment Act of 2011** added **Article 43B** to the Indian Constitution.
- **Article 43B** provides for the **promotion of cooperative societies** in India. It deals with the **rights of cooperative societies** to form, operate, and be regulated by laws passed by the state legislature.
- The amendment aimed at giving more **legal protection and recognition** to the cooperative societies and providing a legal framework to regulate and strengthen them, ensuring their **functioning** and **democratic control**.

Information Booster

- **Article 43B**:
  - **Promotes Cooperative Societies**: It enables the state to promote the **socio-economic development** of cooperative societies and strengthen their role in the economy.
  - The amendment gives cooperative societies the **status of a distinct legal entity** and ensures their **autonomy** in managing their affairs.
  - This was added under the **Directive Principles of State Policy** in Part IV of the Constitution.
- **Cooperatives**:
  - The amendment underscores the importance of **cooperative societies** in sectors like **agriculture**, **credit**, and **marketing**, which are critical to rural development in India.
  - It also promotes **transparency** and **democracy** within cooperatives.

Additional Information

- **Article 151**:
  - Deals with the **audit of accounts** of the **States' Finance** and is unrelated to the 97th Amendment.
- **Article 127**:
  - Deals with the **appointment of ad hoc judges** to the Supreme Court and was not affected by the 97th Amendment.
- **Article 51**:
  - Focuses on the **promotion of international peace and security** but was not introduced by the 97th Amendment.

S14. Ans.(a)
Sol. The correct answer is (a) 2 and 3 only
Explanation:

- **Garo** and **Khasi** are the two major languages **spoken in Meghalaya**, both recognized as **associate official languages** of the state.
- These languages are primarily spoken by the **Garo and Khasi tribes**, two of the three major tribal communities in Meghalaya.
- **Kokborok**, on the other hand, is **spoken in Tripura**, not in Meghalaya.

Information Booster:
Languages of Meghalaya:

- **Khasi**: Spoken mainly in the **Khasi Hills**, it belongs to the **Austroasiatic language family**.
- **Garo**: Spoken predominantly in the **Garo Hills**, it is part of the **Tibeto-Burman language family**.
- **Pnar (or Jaintia)**: Another important language spoken by the **Jaintia tribe** in Meghalaya.

These languages are rich in oral traditions, and efforts have been made to preserve them through literature, education, and media.
Additional Knowledge:
Kokborok:

- Spoken mainly in **Tripura**, by the **Tripuri (Borok)** people.
- It is recognized as an official language of **Tripura**, alongside Bengali and English.

S15. Ans.(a)
Sol. The correct answer is **(a) Dantidurga**
Explanation:

- **Dantidurga**, a **Rashtrakuta chief**, overthrew his **Chalukya overlord** in the **8th century CE**.
- After establishing his sovereignty, he **performed the Hiranya-Garbha ritual**, which means **"golden womb"**.
- This **Brahmanical ritual** symbolized a **rebirth into the Kshatriya class**, legitimizing his rule in traditional varna terms.

Information Booster:
Hiranya-Garbha Ritual:

- A **sacrificial ritual** mentioned in ancient texts.
- Performed by kings to assert their **divine right to rule**.
- Often used when a **non-Kshatriya ruler** wanted to **gain legitimacy** as a Kshatriya.

Rashtrakuta Dynasty (753–982 CE)

- **Capital**: Manyakheta (present-day Malkhed, Karnataka)
- **Known For**: Military conquests, temple architecture, and literary patronage

Important Rulers & Their Contributions
Dantidurga (735–756 CE)

- Founder of the Rashtrakuta dynasty.
- Defeated the Chalukyas and established the kingdom.

Krishna I (756–774 CE)

- Expanded the empire into parts of Karnataka and Tamil Nadu.
- Defeated the Pallavas.

Dhruva (780–793 CE)

- Defeated Pratihara ruler Vatsaraja and Pala king Dharmapala.
- Adopted the **Ganga and Yamuna emblems** after northern conquests.

Govinda III (793–814 CE)

- Subdued Pala king Dharmapala and Chakrayudha of Kanauj.
- Crushed southern confederacies of Ganga, Chera, Pandya, and Pallava rulers.

Amoghavarsha I (814–878 CE)

- A peace-loving ruler and devout Jain.
- **Literary contributions**:
    - Authored Kavirajamarga (first known Kannada work on poetics).
    - Composed Prasnottaramalika in Sanskrit.

Krishna III (939–967 CE)

- Fought against the Paramaras of Malwa and the Eastern Chalukyas of Vengi.
- Defeated the Chola ruler and reached Rameshwaram, where he erected a **pillar and temple**.

S16. Ans.(b)
Sol. ROM stands for Read Only Memory. It is a type of non-volatile memory that is used to store data that cannot be easily modified or written to, such as firmware or system boot-up instructions.
Important Key Points:
1. Non-Volatile: ROM retains its data even when the power is turned off, making it essential for storing critical system information.
2. Pre-programmed: Data in ROM is usually written during the manufacturing process and cannot be modified or only modified under specific conditions.
3. Used for Firmware: ROM typically stores firmware, which is the low-level software required to boot a computer or device.

S17. Ans.(b)
Sol. The correct answer is option ((b)) Anubhava Mantapa.
Explanation
Basaveshwara, also known as **Basavanna**, was a 12th-century philosopher, poet, and reformer from Karnataka who laid the foundation of the **Lingayat movement**, advocating for social equality, rationalism, and devotion to a formless god. One of his most impactful contributions was the establishment of the **Anubhava Mantapa**, often referred to as the "hall of spiritual experience."
This **revolutionary institution** functioned as an early **spiritual and intellectual parliament**, where **men and women of all castes and communities** could engage in open dialogue on **philosophy, spirituality, ethics, and social reform**. It was

based in **Kalyana (modern-day Basavakalyan)** and attracted thinkers like **Allama Prabhu, Akka Mahadevi, Chennabasavanna**, and others. It challenged prevailing **Brahmanical authority**, promoted **Kayaka (dignity of labor)**, and disseminated reformist ideas through **Vachanas**, short poetic compositions in Kannada. This institution marked a watershed moment in India's religious and social history.

Information Booster

- →**Anubhava Mantapa** was the **first spiritual democracy** in Indian history.
- →It encouraged **free dialogue** among **all sections of society**.
- →It nurtured **Vachana literature**—simple, reformist Kannada verses.
- →Empowered **women and marginalized communities**.
- →Based in **Basavakalyan**, Karnataka.
- →Functioned as the **ideological center of the Lingayat movement**.

Additional Knowledge

(a) Nalanda Mahavihara – An ancient Buddhist monastic university in Bihar, established in the 5th century CE. It was a major center of learning in subjects like logic, grammar, medicine, and Buddhist philosophy, but not associated with Basavanna or the Lingayat movement.

(b) Anubhava Mantapa – The correct answer. Founded by **Basaveshwara**, this institution was an open platform for **spiritual discussion and social reform**. It represented one of the earliest examples of **inclusive intellectual assembly** in India and played a central role in shaping the **Lingayat religious identity**.

(c) Takshashila – An ancient Indian university near modern-day Pakistan. It was a center for learning Vedic texts, medicine, and politics, long before Basavanna's time and unrelated to his reformist mission.

(d) Varanasi Gurukul – Refers generally to traditional centers of Brahmanical learning in Varanasi. These institutions adhered to caste-based restrictions and orthodox practices, unlike the egalitarian vision of **Anubhava Mantapa**.

S18. Ans.(d)

Sol. The correct answer is: (d) Jyotiba Phule

Explanation:

Gulamgiri is a book written by **Jyotiba Phule** in **1873**. The book strongly critiques the caste system and the oppression of lower castes in India. **Jyotiba Phule** was a social reformer and activist who worked for the upliftment of the **lower castes** and **women's rights** in India.

Gulamgiri (which translates to **"Slavery"**) exposes the plight of the untouchables and calls for the abolition of the caste system.

Information Booster:

- **Jyotiba Phule** was a pioneering social reformer who also founded the **Satyashodhak Samaj** in 1873 to promote social equality and upliftment of the oppressed.
- **Gulamgiri** was one of the early works that openly criticized the **upper castes' exploitation** of the lower castes and advocated for the rights of the oppressed in society.
- Phule's **social reforms** were ahead of his time and laid the groundwork for later movements by figures like **B.R. Ambedkar** and **Mahatma Gandhi** in the fight against untouchability and for **social justice**.

Additional Information:

- **Bal Gangadhar Tilak**: Known for his contributions to India's independence movement and his writings like **"Gita Rahasya"**
- **Mahatma Gandhi**: Known for his leadership in the **Indian independence struggle** and works like **"Hind Swaraj"**

BR Ambedkar: Played a crucial role in **drafting the Indian Constitution** and championed the cause of Dalits.

S19. Ans.(b)

Sol. In email tools/software, the common fields for entering email addresses are **to**, **bcc** (blind carbon copy), and **cc** (carbon copy). **tcc** is not a valid option, and it is likely a typographical error.

Important Key Points:

1. **To** is used to enter the primary recipients of the email. The main recipient's email address goes in the **To** field.
2. **Cc** is used to send a copy of the email to others, and all recipients can see the addresses in the "cc" field. **Cc** is used to send a carbon copy of the email to secondary recipients.
3. **Bcc** allows sending a copy to others without revealing their email addresses to the other recipients.

S20. Ans.(c)
Sol. The shortcut **Ctrl + V** is used to **paste** the **selected or copied text** in most applications. It is part of the standard set of keyboard shortcuts used for **copy-paste operations**, making editing and formatting tasks faster and more efficient.
Important Key Points:
1. **Ctrl + V** is the universal shortcut to **paste text, images, or files**.
2. It works after using **Ctrl + C (copy)** or **Ctrl + X (cut)**.
3. This shortcut increases **productivity** and saves time during **text processing**.

Knowledge Booster:
• **Ctrl + P** – Used to **print** the current document or page.
• **Ctrl + J** – Opens the **Downloads** folder in browsers or aligns text in **justified format** in word processors.
• **Ctrl + I** – Used to **italicize** selected text in most word processors like MS Word.

S21. Ans.(a)
Sol. The **Memory Data Register (MDR)** is responsible for **storing the actual data** that is being read from or written to memory. It acts as a temporary holding area for information before it is processed or moved. The MDR ensures smooth and accurate data transfer between the CPU and the memory.
Important Key Points:
1. **MDR** holds the **data itself**, not the memory address.
2. It is also called the **Memory Buffer Register** in some contexts.
3. The MDR works in coordination with the **Memory Address Register (MAR)**.
4. It plays a critical role in the **read/write process** between CPU and RAM.
5. Helps in **data buffering** during memory operations.

Knowledge Booster:
•→**Memory Address Register** stores **addresses**, not data.
•→**Memory Arithmetic Registers** is not a standard component in CPU architecture.
•→**Memory Access Register** is not a recognized register in classical computer systems.

S22. Ans.(c)
Sol. Ans. (c)
The Technology and Innovation Report 2025 was released by the United Nations Conference on Trade and Development (UNCTAD). This biennial report provides insights into the latest developments in technology and innovation that influence sustainable development.
The 2025 edition focuses on "Inclusive Artificial Intelligence for Development", highlighting both the opportunities and challenges posed by AI, especially for developing nations. UNCTAD warns of widening technological divides and emphasizes the need for inclusive governance, capacity-building, and policy-making.
The report provides data-driven analysis and policy recommendations to ensure emerging technologies like AI are leveraged to support the Sustainable Development Goals (SDGs).
Information Booster
•→UNCTAD is a permanent intergovernmental body established by the United Nations General Assembly in 1964.
•→The 2025 report theme is “Inclusive Artificial Intelligence for Development.”
•→AI could impact 40% of global jobs, with major implications for developing countries.
•→118 countries lack representation in global AI governance.
•→The AI market is projected to reach $4.8 trillion by 2033.
•→The report calls for investment in data, infrastructure, and digital skills.
Additional Knowledge
(a) World Bank – Focuses on financial and technical assistance to developing countries. While it publishes key reports like the World Development Report, it is not responsible for the Technology and Innovation Report.
(b) World Economic Forum (WEF) – Known for the Global Competitiveness Report and Future of Jobs Report. It plays a key role in discussions around tech trends but doesn’t author the UN's Technology and Innovation Report.
(c) United Nations Conference on Trade and Development (UNCTAD) – This is the correct answer. UNCTAD plays a major role in analyzing how trade, technology, and development intersect, and it publishes the biennial Technology and Innovation Report, aiming to shape policies that reduce inequality and promote sustainable development.
(d) International Telecommunication Union (ITU) – A UN agency for information and communication technologies. It issues reports like the Global ICT Development Index, but not the Technology and Innovation Report.

S23. Ans.(c)
Sol. The correct answer is (c) Uttar Pradesh
Explanation:
The traditional dance forms **'Charkula'** and **'Dadra'** originate from the culturally rich state of **Uttar Pradesh**. **Charkula** is a **folk dance of the Braj region**, typically performed by women balancing a large multi-tiered wooden pyramid (charkula) on their heads, often with lamps lit on it. It celebrates **Radha's birth and Krishna's Ras Leela**. **Dadra**, on the other hand, is a **light classical music-based dance**, typically associated with semi-classical Hindustani music traditions and sung/danced in a **6-beat rhythm cycle**, popular in eastern UP regions.
Information Booster:
• **Charkula Dance** is especially popular during **Krishna Janmashtami and Holi festivals**.
• The dance showcases **balancing skills**, grace, and devotion in the **Braj culture**.
• It often features **songs of Krishna and Radha**, symbolizing **love and divine playfulness**.
• **Dadra** dance draws its name from the **Dadra taal (rhythmic cycle)** used in semi-classical singing.
• **Dadra compositions** are lyrical, emotive, and often revolve around **love and devotion**.
• Uttar Pradesh is home to several folk and classical traditions, including **Kathak, Raslila, Nautanki**, and more.
• These dances are deeply connected with the **heritage of Mathura, Vrindavan, and eastern UP** regions.
Additional Information:
• **Gujarat** is known for vibrant dance forms like **Garba**, **Dandiya Raas**, and **Tippani**, widely celebrated during Navratri.
• **Maharashtra** is renowned for **Lavani**, **Koli**, and **Tamasha** dance forms reflecting local cultures and traditions.
• **Tamil Nadu** is the birthplace of **Bharatanatyam**, a classical dance, and folk dances like **Karagattam** and **Kummi** are also prominent.

S24. Ans.(c)
Sol. The correct answer is: (c) Article 269A
Explanation:
Article 269A of the **Constitution of India**, inserted by the **101st Constitutional Amendment Act, 2016**, provides for the **levy and collection of Goods and Services Tax (GST)** in the **course of inter-State trade or commerce**.
It allows the **Central Government** to **levy and collect the GST** on **inter-State supply of goods and services**, and the tax collected is to be **apportioned between the Union and the States** based on the recommendations of the **GST Council**.
Information Booster:
- **GST** was implemented on **1st July 2017**.
- **Article 246A** also empowers **both Centre and States** to levy GST on **intra-state supplies**.
- **Article 269A** deals specifically with **inter-state trade and commerce**.
- The **Integrated GST (IGST)** is levied by the Centre and shared with the States.
- The **GST Council** is constituted under **Article 279A**.

S25. Ans.(a)
Sol. The correct answer is (A) 356
Explanation:
Article 356 of the **Indian Constitution** deals with the **President's Rule** in a state. It gives the President the power to dissolve the **state government** and take over the administration of a state if the President believes that the **governance in the state cannot be carried out according to the provisions of the Constitution**. This is also known as **Emergency Rule** or **State Emergency**.
Information Booster:
• **Article 356** provides for the **proclamation of President's Rule** when the President is satisfied that the **government of a state** cannot be conducted as per the **Constitution**.
• The imposition of **President's Rule** in a state results in the **dissolution of the state legislative assembly** and the **appointment of the Governor** as the administrator of the state.
• This provision has been invoked multiple times in India's history, often in states facing political instability or breakdown of law and order.
Additional Information:
• **Article 370** – Deals with the **special status of Jammu and Kashmir**.
• **Article 326** – Relates to the **right to vote** in India.
• **Article 380** – Pertains to the **President's Address** at the first session of the Parliament.

S26. Ans.(c)
Sol. Ans. (c)
The theme for World Homeopathy Day 2025 is 'Adhyayan, Adhyaapan, Anusandhaan', which translates to 'Education, Practice and Research'. This theme underscores the need for continuous learning, quality education, and evidence-based research in the field of homeopathy. The focus is on improving standards in homeopathic education, encouraging best practices in clinical environments, and fostering scientific research to validate homeopathic treatments. The 2025 observance is particularly notable for being India's largest-ever homeopathy symposium, hosted in Gandhinagar, Gujarat. Organized by the Ministry of AYUSH and the Central Council for Research in Homoeopathy (CCRH), the event is set to bring together practitioners, students, researchers, and policymakers to deliberate on advancing homeopathy through structured and scientific approaches. This theme aligns with India's broader goal of strengthening traditional medicine systems through modern frameworks.
Information Booster
•→2025 Theme: *Adhyayan, Adhyaapan, Anusandhaan* (Education, Practice, Research)
•→Celebrated on April 10th annually
•→Hosted in Gandhinagar, Gujarat for 2025
•→Organized by Ministry of AYUSH and CCRH
•→Aims to promote scientific rigor in homeopathy
•→Focuses on capacity building and evidence-based practice
Additional Knowledge
(a) Integrative Healthcare and Holistic Healing – This is a broad theme often associated with traditional medicine events but was not selected for World Homeopathy Day 2025. It emphasizes blending modern and alternative therapies for comprehensive care.
(b) Enhancing Global Homeopathy Reach – While promoting the global outreach of homeopathy is an ongoing goal, this was not the official 2025 theme. However, it reflects international aspirations to expand homeopathy in public health.
(c) Adhyayan, Adhyaapan, Anusandhaan – Education, Practice and Research – Correct Answer. This theme promotes academic excellence (*Adhyayan*), professional teaching and mentorship (*Adhyaapan*), and innovative scientific inquiry (*Anusandhaan*). It signifies a holistic approach to advancing homeopathy in line with evidence-based standards and global healthcare trends.
(d) Homeopathy for a Healthier Tomorrow – A generalized theme used in previous years or campaigns but not the official one for 2025. It signifies hope and future-oriented growth for the homeopathy sector.

S27. Ans.(d)
Sol. Correct Answer:D. Article 371
Explanation:
Article 371 of the Indian Constitution provides for **special provisions for certain states** to meet their **unique socio-economic and cultural needs**. These provisions are aimed at preserving the **regional identity**, protecting **tribal populations**, and promoting **development** in backward regions.
Articles 371 to 371J cover **special provisions** for states like **Maharashtra, Gujarat, Nagaland, Assam, Manipur, Andhra Pradesh, Sikkim, Mizoram, Arunachal Pradesh, Goa, Karnataka, and Telangana**.
Information Booster:
- **Article 371A**: Special provisions for **Nagaland**
- **Article 371B**: For **Assam**
- **Article 371C**: For **Manipur**
- **Article 371D & E**: For **Andhra Pradesh and Telangana**
- **Article 371F**: For **Sikkim**
- **Article 371G**: For **Mizoram**
- **Article 371J**: For **Hyderabad-Karnataka** region in **Karnataka**

These provisions allow flexibility in the application of laws, administration, and governance.
Additional Information:
- **Article 444** – Not an article in the Constitution.
- **Article 290** – Deals with **grants-in-aid from the Centre to states**, not special provisions.
- **Article 356** – Pertains to **President's Rule**, not special state provisions.

S28. Ans.(a)
Sol. The correct answer is (a) 6th April 2025
Swaminarayan Jayanti in 2025 is celebrated on **6th April**. This day is dedicated to celebrating the birth of **Shri Swaminarayan**, also known as **Sahajanand Swami**, a prominent spiritual leader who founded the Swaminarayan tradition. The celebration falls on the **ninth day of the bright half (Shukla Paksha)** of the Hindu month of **Chaitra**, which also coincides with **Ram Navami**, the birthday of **Lord Ram**.
Information Booster:

- Swaminarayan Jayanti is marked by **devotional singing**, **special pujas**, and **aarti** to honor the birth of Shri Swaminarayan.
- The **Navami Tithi** begins on **5th April 2025** at **07:27 PM** and ends on **6th April 2025** at **07:23 PM**.
- Shri Swaminarayan's birth took place in **1781** at **Chapaiya**, near **Ayodhya**.

S29. Ans.(d)
Sol. The correct answer is (**d) Eighth Schedule**.
The Eighth Schedule plays a crucial role in recognizing and promoting the languages of India, which is essential for cultural preservation and unity in diversity
• Articles 344 (1) and 351 of the Constitution of India are related to the Eighth Schedule, which lists the recognized languages in India. Article 344 (1) allows the President to establish a Commission to review the linguistic situation in the country and recommend measures for the development of the languages in the Eighth Schedule.
• Article 351 emphasizes the duty of the Union to promote the spread of the Hindi language and to develop the languages in the Eighth Schedule. This reflects the government's commitment to preserving and fostering India's linguistic diversity.
Additional Information:
• **(a) Third Schedule**: This schedule contains the forms of oaths and affirmations for various constitutional offices.
• **(b) Sixth Schedule**: This schedule provides for the administration of tribal areas in certain north eastern states of India.
• **(c) Fifth Schedule**: This schedule deals with the administration and control of Scheduled Areas and Scheduled Tribes in India..

S30. Ans.(d)
Sol. Ans. (d)
The 37th Kathak Mahotsav 2025 was successfully held in New Delhi, organized by Kathak Kendra, which functions under the Sangeet Natak Akademi, India's national academy for music, dance, and drama. The festival is an important annual event dedicated to celebrating Kathak, one of the eight classical dance forms of India.
Kathak Mahotsav provides a prestigious platform for renowned maestros and emerging artists to showcase their talent. The 2025 edition featured performances from across India, displaying various gharanas (schools) such as Lucknow, Jaipur, and Banaras styles. This event contributes significantly to the preservation, promotion, and dissemination of classical dance traditions.
Organized in the capital city, it attracts scholars, critics, students, and lovers of Indian classical art forms. The involvement of Sangeet Natak Akademi ensures that the event upholds high artistic standards while fostering cultural appreciation on a national scale.
Information Booster:

- Kathak Kendra is India's premier institution for Kathak training and research.
- It is a constituent unit of Sangeet Natak Akademi, an autonomous body under the Ministry of Culture.
- Kathak Mahotsav is an annual national festival celebrating the Kathak tradition.
- The 37th edition was held in 2025 in New Delhi.
- Major Kathak Gharanas: Lucknow, Jaipur, Banaras.
- Promotes inter-generational learning and cultural exchange.

Additional Knowledge:
(a) Mumbai – While Mumbai is a cultural hub, it is not the host of the 2025 Kathak Mahotsav. However, the city regularly hosts various classical dance festivals like the Kala Ghoda Arts Festival and Elephanta Festival, where Kathak may be featured.
(b) Lucknow – Known as the birthplace of the Lucknow Gharana of Kathak, this city is integral to the development of the dance form. Though historically significant, Lucknow was not the venue for the 2025 Mahotsav.
(c) Jaipur – Jaipur is another prominent Kathak center, representing the Jaipur Gharana known for vigorous footwork. It plays a key role in the Kathak tradition but was not the 2025 festival location.
(d) New Delhi – Correct answer. New Delhi is the seat of major cultural institutions like Kathak Kendra and Sangeet Natak Akademi. The 37th Kathak Mahotsav 2025 was held here, showcasing national-level participation and receiving broad media and academic attention.

S31. Ans.(c)
Sol. The Correct Answer is: (c) Rs 370
The Ministry of Rural Development (MoRD) notified revised MGNREGA wages for FY 2025–26 under **Section 6(1) of the MGNREGA Act, 2005**. The **average daily wage has been increased from Rs 349 to Rs 370 per person**, effective **April 1, 2025**. This revision reflects the inflation-indexed rise based on the **Consumer Price Index for Agricultural Labourers (CPI-AL)**.
Information Booster:
• The wage hike ranges from **Rs 7 to Rs 26**, depending on the state.
• **Haryana** recorded the **highest wage of Rs 400**, the first state to cross this mark.
• **5 states** (A.P, Arunachal, Assam, Nagaland, Telangana) had the **lowest increase of Rs 7**.
• Wages are revised annually based on **CPI-AL**, indicating rural inflation.
• MGNREGA guarantees **100 days** of wage employment per household annually.
• **33% of the beneficiaries** must be **women**, as per MGNREGA guidelines.
• During FY25, **5.66 crore households** availed work under the scheme.

S32. Ans.(d)
Sol. The correct answer is (d) 1-b, 2-c, 3-a, 4-d.
Bharatanatyam:
•→**State: Tamil Nadu**
•→Bharatanatyam is one of the oldest classical dance forms of India, originating from Tamil Nadu. It is characterized by its fixed upper torso, bent legs, intricate footwork, and expressive hand gestures.
Mohiniattam:
•→**State: Kerala**
•→Mohiniattam is a classical dance form from Kerala, known for its graceful and swaying movements. It is traditionally performed by women and depicts the feminine aspect of divine beauty.
Garba:
•→**State: Gujarat**
•→Garba is a traditional folk dance of Gujarat, performed during festivals, especially Navratri. It involves circular movements and is usually accompanied by rhythmic clapping and singing.
Sattriya:
•→**State: Assam**
•→Sattriya is a classical dance form originating from Assam. It was developed by the Vaishnavite monk Sankardev in the 15th century and is performed in monasteries (sattras) as part of religious rituals.
Additional Information:
•→Each of these dance forms has its unique style, costume, and cultural significance, representing the diverse heritage of Indian classical and folk dances.
•→Understanding the regional origins of these dances is essential in appreciating the cultural diversity of India.

Dance	Originates
Kathak	(North, West, and Central India)
Bharatnatyam	Tamilnadu
Kathakali, Mohiniattam	Kerela
Kuchipudi	Andhra Pradesh
Odissi	Odisha
Sattriya	Assam
Manipuri	Manipur

S33. Ans.(d)
Sol. Ans. (d)
The Abel Prize 2025 has been awarded to Masaki Kashiwara, a distinguished Japanese mathematician, for his pioneering contributions to algebraic analysis and representation theory. Kashiwara is especially celebrated for developing the theory of D-modules, a framework that revolutionized the study of differential equations using algebraic geometry. He also introduced the concept of crystal bases, which play a crucial role in the representation theory of quantum groups. His work bridges deep connections between mathematics and theoretical physics, with applications in string theory, algebraic geometry, and microlocal analysis. The Abel Prize, awarded by the Norwegian Academy of Science and Letters, is regarded as one of the highest honors in mathematics globally, often equated with the Nobel Prize in prestige within the mathematical community.

Information Booster
•→Winner: Masaki Kashiwara (Japan)
•→Award: Abel Prize 2025
•→Fields of Contribution: Algebraic analysis, D-modules, representation theory
•→Institutions associated: Kyoto University, École Normale Supérieure (France)
•→Significance: Often called the "Nobel of Mathematics"
•→Awarded by: Norwegian Academy of Science and Letters
Additional Knowledge
(a) Terence Tao – A renowned mathematician from the U.S., known for contributions to harmonic analysis, number theory, and PDEs, but he is not the 2025 recipient of the Abel Prize.
(b) Peter Scholze – A German mathematician famous for his work in arithmetic geometry and perfectoid spaces. Although a Fields Medalist (2018), he did not win the Abel Prize in 2025.
(c) Maryna Viazovska – A Ukrainian mathematician awarded the Fields Medal in 2022 for her groundbreaking work on the sphere-packing problem, but she is not the Abel Prize 2025 laureate.
(d) Masaki Kashiwara – Correct answer. Kashiwara is celebrated for foundational advances in modern algebra, especially D-modules and crystal bases, which have reshaped representation theory and algebraic geometry. His contributions are both theoretically profound and widely influential.

S34. Ans.(c)
Sol. Ans. (c)
In the ICC Champions Trophy 2025, New Zealand's Matt Henry is the leading wicket-taker, having taken 10 wickets, making him the highest wicket-taker in the tournament so far.
The top five wicket-takers in the tournament are:
1. Matt Henry (NZ) – 10 wickets
2. Varun Chakaravarthy (IND) – 9 wickets
3. Mitchell Santner (NZ) – 9 wickets
4. Mohammad Shami (IND) – 9 wickets
5. Michael Bracewell (NZ) – 8 wickets
Since Matt Henry has the most wickets (10 wickets), the correct answer is (c) Matt Henry.
Information Booster
•→Matt Henry leads with 10 wickets, showing his dominance in the tournament.
•→India's Varun Chakaravarthy and Mohammad Shami are among the top wicket-takers, both securing 9 wickets each.
•→New Zealand's bowling attack is strong, with three bowlers (Matt Henry, Santner, and Bracewell) in the top five wicket-takers.
•→Mitchell Santner (9 wickets) is the highest wicket-taking spinner from New Zealand.
•→Michael Bracewell (8 wickets) has been effective with his spin bowling, making a strong impact.
Additional Knowledge
•→Varun Chakaravarthy (Incorrect): He has 9 wickets, ranking second, but not the highest.
•→Mohammad Shami (Incorrect): He also has 9 wickets, making him joint-second but not the leader.
•→Mitchell Santner (Incorrect): With 9 wickets, he is among the top performers but still behind Matt Henry (10 wickets).

S35. Ans.(b)
Sol. Correct Answer:B. Amit Shah
Explanation:
•→Union Minister **Amit Shah**, Ministry of Home Affairs (MHA) and Ministry of Cooperation (MoC), launched the **'BHARATPOL' portal** in New Delhi.
Information Booster:
•→The CBI, India's National Central Bureau (NCB) for INTERPOL, developed the 'BHARATPOL' portal.
•→The **'BHARATPOL' portal** streamlines processes for Indian law enforcement agencies (LEAs) to seek international assistance through INTERPOL in criminal matters.
•→The portal addresses cybercrime, financial fraud, human trafficking, and other translational crimes requiring international collaboration.

S36. Ans.(b)
Sol. The correct answer is **Siachin glacier**.
- The Siachen Glacier is located in the Eastern Karakoram range in the Himalayas, just northeast of Point NJ9842 where the Line of Control between India and Pakistan ends.
- The Siachen Glacier is the world's highest battlefield.

Information Booster:

- It is the Second-Longest glacier in the World's Non-Polar areas.
- Fedchenko Glacier, located in Yazgulem Range, Tajikistan is the Longest glacier in the World's Non-Polar areas.
- The Siachen Glacier lies immediately south of the great drainage divide that separates the Eurasian Plate from the Indian subcontinent in the extensively glaciated portion of the Karakoram sometimes called the "Third Pole".
- The Siachen Glacier is part of Ladakh and has now been converted into a Union Territory.

S37. Ans.(d)

Sol. •→In December 2024, **Netumbo Nandi-Ndaitwah** was elected as **Namibia's first female president**, securing approximately 57% of the vote.

•→Her election marks a significant milestone in Namibia's political history, as she becomes the country's fifth president and the first woman to hold this position.

•→Nandi-Ndaitwah has a distinguished political career, having served as Namibia's Vice President and as a long-standing member of the ruling **South West Africa People's Organization (SWAPO)** party.

•→Her leadership is expected to focus on economic reforms, poverty alleviation, and youth empowerment.

About Namibia:

•→**President-elect-** Netumbo Nandi-Ndaitwah

•→**Capital-** Windhoek

•→**Currency-** Namibian Dollar(NAD)

S38. Ans.(b)

Sol. •→The **13th edition of Exercise Agni Warrior (XAW-2024)**, a bilateral military exercise between the Indian Army and the Singapore Armed Forces, was conducted at the **Field Firing Ranges in Devlali, Maharashtra**, from **28th to 30th November 2024**.

•→This exercise aimed to enhance mutual understanding of drills and procedures, achieving jointness as a multinational force under the United Nations Charter.

Information Booster:

•→**Participants:** The exercise involved 182 personnel from the **Singapore Artillery** and 114 personnel from the **Indian Army's Regiment** of Artillery.

•→**Activities:** The exercise showcased joint firepower planning, execution, and the use of new-generation equipment by the artillery units of both armies.

•→**Significance:** This collaboration reflects the strong defense relationship between Singapore and India, enhancing operational capabilities and strengthening bilateral ties

S39. Ans.(c)

Sol. •→In 2025, Hockey India is commemorating the **centenary of Indian hockey**, marking 100 years since the nation's first participation in international hockey competitions.

•→This milestone celebrates India's rich legacy in the sport, including multiple Olympic gold medals and significant contributions to global hockey.

Information Booster:

•→**Historical Context**:

•→India's debut in international hockey dates back to the 1928 Amsterdam Olympics, where the national team clinched its first gold medal.

•→Over the decades, India has secured a total of eight Olympic gold medals in hockey, with the most recent being at the 1980 Moscow Olympics.

About Hockey India:

•→Hockey India (HI) is the apex body of India which has the sole mandate to govern and conduct all activities for both men and women hockey in India.

•→**President–** Dr. Dilip Kumar Tirkey

•→**Secretary General-** Bhola Nath Singh,

•→**Headquarters–** New Delhi, Delhi

•→**Established –** 1925

S40. Ans.(c)

Sol. The correct answer is **(c) 1928**.

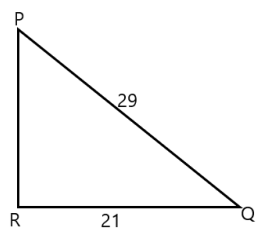
•→The Bardoli Satyagraha took place in 1928 in the Bardoli district of Gujarat. It was a peasant movement led by Sardar Vallabhbhai Patel against the unjust increase in land revenue imposed by the British government. The farmers of Bardoli refused to pay the increased taxes and organized a non-violent protest under Patel's leadership. The successful campaign forced the government to roll back the tax hike, and Patel earned the title "Sardar" for his leadership **during this movement.**

Information Booster:
•→The success of the Bardoli Satyagraha was a significant moment in India's freedom struggle as it demonstrated the effectiveness of non-violent resistance.
•→The movement also highlighted the growing discontent among the rural population against British policies and brought Sardar Patel into national prominence as a leader of the masses.

S41. Ans.(d)
Sol. Given:
The product of22 and33 is:
Concept Used:
An irrational number is a number that cannot be expressed as a fractionpqqp, where p and q are integers and q is not equal to 0.
Solution:
2×3=62×3=6
66 is an irrational number.

S42. Ans.(b)
Sol. Given:
Scores in the subjects:
Mathematics = 80
English = 90
Science = 75
Weights of the subjects:
Mathematics = 40%
English = 30%
Science = 30%
Solution:
Mathematics Contribution:
80×40100=3280×10040=32
English Contribution:
90×30100=2790×10030=27
Science Contribution:
75×30100=22.575×10030=22.5
Now, sum the contributions:
Overall Grade = 32 + 27 + 22.5 = 81.5
Thus, the overall grade of the student is 81.5.

S43. Ans.(c)
Sol. Given:
Right-angled triangle (PQR), right-angled at (R)
(PQ = 29 cm) (hypotenuse)
(QR = 21 cm) (one leg)
∠Q=θ∠Q=θ
Concept Used:



Pythagorean Theorem
PR =PQ2−QR2PQ2−QR2

sinθ=oppositehypotenusecosθ=adjacenthypotenusecos2θ−sin2θ=cos2θsinθ=hypotenuseopposite cosθ=hypotenuseadjacent cos2θ−sin2θ=cos2θ

Solution:

PR =PQ2−QR2=292−212PQ2−QR2=292−212

=841−441=400=841−441 =400

= 20 cm

sinθ=PRPQ=2029cosθ=QRPQ=2129cos2θ−sin2θ=cos2θcos2θ−sin2θ=(2129)2−(2029)2=441−400841=41841sinθ=PQPR=2920 cosθ=PQQR=2921 cos2θ−sin2θ=cos2θ cos2θ−sin2θ =(2921)2−(2920)2 =841441−400 =84141

S44. Ans.(b)

Sol. Given:

Average age of Raj and his father = 45 years

=> Sum of their ages = 45 × 2 = 90 years

Father's age = 2 × Raj's age

Grandfather's age = 3 × Raj's age

Formula Used:

Average = (Sum of ages) ÷ Number of people

Father's age = 2 × Raj's age

Grandfather's age = 3 × Raj's age

Solution:

Let Raj's age be x.

Then Father's age = 2x

Now,

x + 2x = 90

=> 3x = 90

=> x = 30 (Raj's age)

Now,

Grandfather's age = 3 × x = 3 × 30 = 90 years

Ans. (b) 90 years

S45. Ans.(a)

Sol. Given:

Population in 2018 = 50,000

Rate of increase = 6% per annum

Time from 2016 to 2018 = 2 years

Time from 2018 to 2020 = 2 years

A = Population in 2016

B = Population in 2020

Concept Used:

Population increase formula: $P(t) = P_0(1+r)t_0(1+r)t$, where P(t) is the population at time t, P_0 is the initial population, r is the rate of increase, and t is the time period.

Solution:

Calculate the population in 2016 (A):

50,000 = A(1 + 0.06)2.06)2

50,000 = A(1.06)21.06)2

50,000 = A×× 1.1236

A =50,0001.12361.123650,000

A ≈ 44,500

Calculating the population in 2020 (B):

B = 50,000(1 +0.06)20.06)2

B = 50,000(1.06)2.06)2

B = 50,000××1.1236

B = 56,180

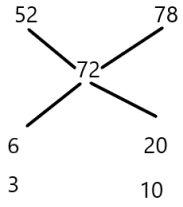
Rounding to the nearest integer, B = 56,180

Calculating B - A:

B - A = 56,180 - 44,500 = 11,680

S46. Ans.(b)
Sol. Given:
Initial ratio = 5:11
New ratio = 3:5
Solution:
Let the number to be added to each term be **x**.
5+x11+x=3511+x5+x=53
(5 + x) × 5=(11 + x) × 3
5x−3x=33−25
2x=8
x=4
4 should be added to each term.

S47. Ans.(a)
Sol. Given:
Vessel A contains milk and water in the ratio 4:5.
Vessel B contains milk and water in the ratio 2:1.
x litres of mixture from Vessel A is mixed with y litres of mixture from Vessel B.
After mixing, the ratio of milk to water in the resulting mixture is 8:5.
Solution:
Milk and water in Vessel A:
In Vessel A, the ratio of milk to water is 4:5.
Therefore, in x litres of mixture from Vessel A:
Milk =49x94x litres
Water=59x=95x litres
Milk and water in Vessel B:
In Vessel B, the ratio of milk to water is 2:1.
Therefore, in y litres of mixture from Vessel B:
Milk =23y32y litres
Water =13y31y litres
Total milk in the mixture = Milk from Vessel A + Milk from Vessel B
Total milk=49x+23yTotal milk=94x+32y
Total water=59x+13yTotal water=95x+31y
The ratio of milk to water is given as 8:5, so:
49x+23y59x+13y=8595x+31y94x+32y=58
5×49x+5×23y=8×59x+8×13y5×94x+5×32y=8×95x+8×31y
209x+103y=409x+83y920x+310y=940x+38y
20x + 30y = 40x + 24y
6y = 20x
xy=620=310yx=206=103
Alternate Method:
Milk in Vessel A=49×13×9=5294×13×9=52
Milk in Vessel B =23×13×9=7832×13×9=78
The ratio of milk to mixture =813×13×9138×13×9 = 72



Thus, x and y is added in the 3 : 10

S48. Ans.(c)
Sol. Given:
Cost Price (CP) = ₹4400
Profit Percentage = 24%
Discount on Marked Price (MP) = 12%

Concept Used:
Selling price (SP)
SP = CP×(1+Profit %100)×(1+100Profit %)
Marked price (MP)
SP=MP×(1−Discount %100)MP=SP1−Discount %100SP=MP×(1−100Discount %) MP=1−100Discount %SP
Solution:
Using the formula;
SP=4400×(1+24100)SP=4400×(124100)SP=44×124SP=4400×(1+10024) SP=4400×(100124) SP=44×124
SP = ₹5456
MP=54561−12100MP=545688100MP=5456.088MP=1−100125456 MP=100885456 MP=.0885456
MP = ₹6200
Alternate Method:
Cost Price = 100% = 4400
1% = 44
Selling Price = 124% =44×124=44×124= 5456
88% = 5456
1% =545688885456
Mark Price = 100% =545688×100885456×100 = ₹6200

S49. Ans.(c)
Sol. Given:
Ratio of rupee coins : 50-paise coins : 25-paise coins = 3 : 4 : 6
Total amount = ₹143 = 14300 paise (since 1 rupee = 100 paise)
Concept Used:
Value = (Number of coins) × (Value of each coin)
Solution:
Total value of rupee coins (100 paise each
3x × 100 = 300x
Total value of 50-paise coins
4x × 50 = 200x
Total value of 25-paise coins:
6x × 25 = 150x
Total value equation
300x + 200x + 150x = 14300
650x = 14300
x =1430065065014300 = 22
Number of 50-paise coins:
4x = 4 × 22 = 88

S50. Ans.(b)
Sol. Given:
Quadrilateral ABCD with sides AB = BC = 10 cm, AD = 5 cm, CD = 13 cm.
AD is perpendicular to diagonal AC.
Solution:
Analyze Triangle ACD:
AD is perpendicular to AC, so triangle ACD is right-angled at A.
Given AD = 5 cm, CD = 13 cm.
Using the Pythagorean theorem:
AC=CD2−AD2=132−52=169−25=144=12cm=CD2−AD2=132−52=169−25=144=12 cm
Area of Triangle ACD:
Area=12×AD×AC=12×5×12=30cm2Area=21×AD×AC=21×5×12=30 cm2
Analyze Triangle ABC:
AB = BC = 10 cm, so triangle ABC is isosceles.
Diagonal AC = 12 cm (from step 1).
Let E be the foot of the perpendicular from B to AC. Since ABC is isosceles, E is the midpoint of AC.
Thus, AE = EC = 6 cm.
Find BE Using the Pythagorean Theorem in Triangle ABE:
BE =AB2−AE2=102−62=100−36=64=8cmAB2−AE2=102−62=100−36=64=8 cm

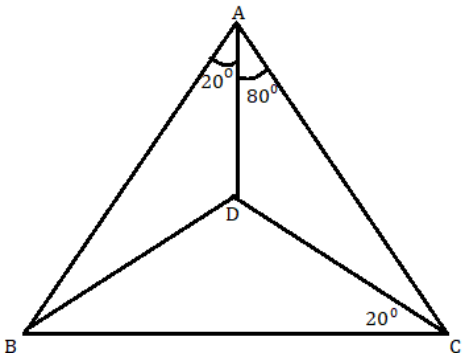
Area of Triangle ABC:
Area=12×AC×BE=12×12×8=48cm2Area=21×AC×BE=21×12×8=48 cm2
Total Area of Quadrilateral ABCD:
AreaABCD=AreaACD+AreaABC=30+48=78cm2AreaABCD=AreaACD+AreaABC=30+48=78 cm2

S51. Ans.(c)
Sol. Given:
First scenario:
8 men can finish the work in 10 days working 6 hours a day.
Second scenario:
20 qualified workers can finish the same work in 6 days working 8 hours a day.
Third scenario:
2 men and 4 qualified workers work simultaneously 10 hours a day.
Concept Used:
Work=Number of workers×Number of days×Hours per day×EfficiencyWork=Number of workers×Number of days×Hours per day×Efficiency
Solution:
Let the efficiency of a man is M and the efficiency of a qualified worker is Q .
First scenario:
Work=8×10×6×M=480MWork=8×10×6×M=480M
Second scenario:
Work=20×6×8×Q=960QWork=20×6×8×Q=960Q
Now,
480M = 960Q
M = 2Q
From the first scenario:
Work=480M=480×2Q=960QWork=480M=480×2Q=960Q
2 men and 4 qualified workers work together.
Efficiency of 2 men =2M=2×2Q=4Q2M=2×2Q=4Q
Efficiency of 4 qualified workers = 4Q
Total efficiency = 4Q + 4Q = 8Q
Let the number of days required be D .
So,
960Q =8Q×10×D8Q×10×D
960Q =80Q×D80Q×D
D =960Q80Q80Q960Q= 12days

S52. Ans.(d)
Sol. Given:
Shopkeeper A:
Markup = 25%
Discount = 15%
Shopkeeper B:
Markup = 20%
Discount = 12%
Formula Used:
Effective Selling Price = Marked Price × (1 - Discount)
Profit Percentage =[(SellingPrice−CostPrice)CostPrice]×100[Cost Price(Selling Price−Cost Price)]×100
Solution:
Let the Cost Price (CP) of the item be ₹100 for simplicity.
Shopkeeper A:
Marked Price (MP) = CP × (1 + Markup)
MP = 100 × (1 + 0.25)
MP = 125
Selling Price = MP × (1 - Discount)
Selling Price = 125 × (1 - 0.15)
Selling Price = 125 × 0.85
Selling Price = 106.25

Profit = Selling Price - CP
Profit = 106.25 - 100
Profit = 6.25
Profit Percentage =(6.25100)×100(1006.25)×100
Profit Percentage = 6.25%
Shopkeeper B:
Marked Price (MP) = CP × (1 + Markup)
MP = 100 × (1 + 0.20)
MP = 120
Selling Price = MP × (1 - Discount)
Selling Price = 120 × (1 - 0.12)
Selling Price = 120 × 0.88
Selling Price = 105.6
Profit = Selling Price - CP
Profit = 105.6 - 100
Profit = 5.6
Profit Percentage = (5.61001005.6) × 100
Profit Percentage = 5.6%
Shopkeeper A has a profit percentage of 6.25%.
Shopkeeper B has a profit percentage of 5.6%.
Shopkeeper A gets a better deal with a profit percentage of 6.25%, compared to Shopkeeper B's profit percentage of 5.6%.

S53. Ans.(d)
Sol. Given:
In an isosceles triangle ABC, AB = AC.
∠BAD = 20°
∠DCB = 20°
∠CAD = 80°
Formula Used:
In an isosceles triangle, the angles opposite the equal sides are equal.
Sum of angles in a triangle = 180°
Solution:



Since AB = AC, ∠ABC = ∠ACB.
In triangle ABD:
∠BAD + ∠ADB + ∠ABD = 180°
∠BAD = 20°
∠CAD = 80°, so ∠BAC = 100° (since ∠BAD + ∠CAD = ∠BAC)
In triangle ABC:
Since AB = AC, ∠ABC = ∠ACB
The sum of the angles in triangle ABC:
∠BAC + ∠ABC + ∠ACB = 180°
Substitute ∠BAC = 100° and ∠ABC = ∠
∠ABC + ∠ACB = 80°
Since ∠ABC = ∠ACB:
2 × ∠ABC = 80°
∠ABC = 40°
The value of ∠ABC is 40°

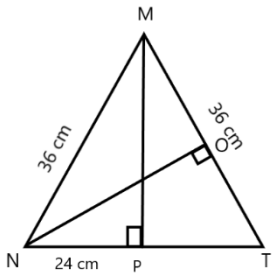
S54. Ans.(d)
Sol. Given:
Increase in radius = 2 cm
Increase in surface area = 704 cm^2
π =227722
Formula Used:
The surface area of a sphere ,S =4πr24πr2
Solution:
The increase in surface area when the radius increases from r to r+2 is:
4π(r+2)2−4πr2=7044π(r+2)2−4πr2=704
4π[(r+2)2−r2]=7044π[(r+2)2−r2]=704
4π(4r+4)=7044π(4r+4)=704
4×227×(4r+4)=7044×722×(4r+4)=704
887×(4r+4)=704788×(4r+4)=704
88(4r + 4) = 4928
4r + 4 = 56
4r = 52
r = 13
The radius of the sphere before the increase was 13 cm.

S55. Ans.(b)
Sol. Given:
Train A and B travel towards each other from P to Q and Q to P.
Time taken by A after crossing to reach Q = 9 hours
Time taken by B after crossing to reach P = 16 hours
Speed of A (SA)SA) = 56 km/h
Concept Used:
When two trains cross each other, the ratio of their speeds is equal to the square root of the inverse ratio of the times taken to reach their destinations after crossing.
SASB=TBTASBSA=TATB
Solution:
Putting the values;
56SB=169SB56=916
56SB=43SB56=34
SB=(56×3)4SB=4(56×3)
SB=1684SB=4168
SB=42SB=42 km/h
Therefore, the speed of train B was 42 km/h.

S56. Ans.(c)
Sol. Given:
Height of cone 1 (h) = 3×× height of cone 2 (H)
Radius of cone 1 (r) =12×21× radius of cone 2 (R)
Total volume of the two cones = 100 $unit^3$
Formula Used:
Volume of a cone =1331πr^2h
Solution:
Volume of first cone:
V1 =1331π$(r)^2$h
From the condition:
V1 =1331π(R)244(R)2(3H)
V1 =1441π$(R)^2$H
V2 =1331π$(R)^2$H

Now,
V1 + V2 = 100
14π(R)2H41π(R)2H+13π(R)2H31π(R)2H = 100
712127π(R)^{2}H = 100
πR^{2}H = 100×127×712
πR^{2}H =1200771200
V1 =1441π(R)^{2}H =14×41×1200771200=30077300
V2 =1331π(R)^{2}H =13×31×1200771200 =40077400
|V2 - V1| =40077400 -30077300
|V2 - V1| =10077100 = 14.3
The difference in the volumes of the cones is 14.3 unit^3

S57. Ans.(a)
Sol. Given:
Triangle MNT with sides MN = 36 cm, MT = 36 cm, and NT = 48 cm.
Formula Used:
Area of triangle **=**12×21× base (b)×× height (h)
Solution:
As MT = NT , So, perpendicular drawn from M to NT bisect the side NT



In△MNP△MNP,
MP^2= MN^2- NP^2
MP^2= (36)^2- (24)^2=1296 - 576 = 720
MP = 1255
Now,
12×48×125=12×36×NO21×48×125=21×36×NO
NO =48×125363648×125 = 1655cm

S58. Ans.(d)
Sol. Given:

[1.5×1.5×1.5+2.7×2.7×2.7+4.8×4.8×4.8−3×1.5×2.7×4.8][1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5][1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5][1.5×1.5×1.5+2.7×2.7×2.7+4.8×4.8×4.8−3×1.5×2.7×4.8]
Formula Used:
a3+b3+c3−3abc=(a+b+c)(a2+b2+c2−ab−bc−ca)a3+b3+c3−3abc=(a+b+c)(a2+b2+c2−ab−bc−ca)
Solution:
[1.5×1.5×1.5+2.7×2.7×2.7+4.8×4.8×4.8−3×1.5×2.7×4.8][1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5][1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5][1.5×1.5×1.5+2.7×2.7×2.7+4.8×4.8×4.8−3×1.5×2.7×4.8]
Applying the formula;
=(1.5+2.7+4.8)(1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5)(1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5)(1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5)(1.5+2.7+4.8)(1.5×1.5+2.7×2.7+4.8×4.8−1.5×2.7−2.7×4.8−4.8×1.5)
= 1.5 + 2.7 + 4.8
= 9

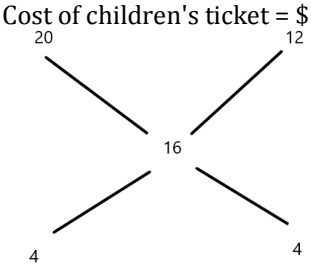
S59. Ans.(b)
Sol. Given:
Sum of money becomes 5 times in 15 years at simple interest.
Time for the second investment is twice the first time.
Rate of interest is the same.

Formula Used:
Simple Interest (SI) =Principal (P) × Rate (R) × Time (T)100100Principal (P) × Rate (R) × Time (T)
Amount (A) = Principal (P) + Simple Interest (SI)
Solution:
Let the original sum (Principal) be P.
The amount becomes 5P in 15 years.
Simple Interest (SI) = Amount - Principal = 5P - P = 4P.
Using the simple interest formula: 4P =(P×R×15)100100(P×R×15)
4P =15PR10010015PR
4 =15R10010015R
400 = 15R
R =803380% per year.
The sum is invested for twice the time, so the new time (T') = 2×× 15 years = 30 years.
The principal (P) and the rate of interest (R =803380 %) are the same.
Calculating the simple interest for the second investment (SI'):
SI' =(P×R×T′)100100(P×R×T′)
SI' =(P×(803)×30)100100(P×(380)×30)
SI' =(P×80×10)100100(P×80×10)
SI' =800P100100800P
SI' = 8P
The final amount for the second investment (A'):
A' = Principal (P) + Simple Interest (SI')
A' = P + 8P
A' = 9P
If the sum was invested twice the time at the same rate of interest, the final amount would be 9 times its original value.

S60. Ans.(d)
Sol. Given:
Investment ratio of A : B : C = 2 : 3 : 5
Charity percentage = 9%
Total profit = ₹2,50,000
Solution:
The investment ratio is 2 : 3 : 5, which means the profit share ratio will also be the same.
Charity amount = 9% of ₹2,50,000 = ₹22,500
Profit after charity = Total profit - Charity amount
= ₹2,50,000 - ₹22,500 = ₹2,27,500
Total ratio parts = 2 + 3 + 5 = 10
C's share of ratio = 5
C's share of profit =(C’s share of ratioTotal ratio parts)×Profit after charity(Total ratio partsC’s share of ratio)×Profit after charity
=510×105× ₹2,27,500 = ₹1,13,750
The share of C in the profit is ₹1,13,750.

S61. Ans.(b)
Sol. Given:
Total tickets sold = 500
Cost of adult ticket = $20
Cost of children's ticket = $12
Total revenue = $8,000
Solution:
Let the number of adult tickets sold be x.
The total number of tickets sold:
x + y = 500, where y is the number of children's tickets.
The total revenue:
20x+12y=8000, where x and y are the numbers of adult and children's tickets, respectively.
From the first equation:
y=500−x
Substitute y = 500 - x into the second equation:

20x + 12(500 - x) = 8000
20x + 6000 - 12x = 8000
8x+6000=8000
8x=2000
x =20008=25082000=250
The number of adult tickets sold is 250.
Alternate Method:
Price per ticket=80005005008000=16
Cost of adult ticket = $20
Cost of children's ticket = $12



Ratioadultchildren=11childrenadult=11
adult ticket sold=5002×12500×1=250

S62. Ans.(a)
Sol. Given:
330 persons can complete the construction of a shopping complex in 50 days.
We need to find the number of persons required to complete the same work in 30 days.
Concept Used:
The work done is directly proportional to the number of persons and the number of days. This can be represented as:
Work=Number of Persons×Number of DaysWork=Number of Persons×Number of Days
Since the work done is the same in both cases, we can set up the equation:
Number of Persons1×Number of Days1=Number of Persons2×Number of Days2Number of Persons1×Number of Days1 =Number of Persons2×Number of Days2
Solution:
Let the number of persons required to complete the work in 30 days be x.
Using the concept of work done:
330×50=x×30330×50=x×30
x =330×503030330×50
x=16500303016500
550 persons are required to complete the same work in 30 days.

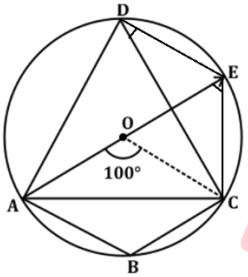
S63. Ans.(b)
Sol. Given:
We need to find the greatest value of$\sin^4\theta+\cos^4\theta.\sin4\theta+\cos4\theta$.
Formula Used:
$\sin^2\theta+\cos^2\theta=1, \sin2\theta+\cos2\theta=1,$
$a^2 + b^2=(a + b)^2- 2ab$
Solution:
Using the identity:
$\sin^4\theta+\cos^4\theta=(\sin^2\theta+\cos^2\theta)2−2\sin^2\theta\cos^2\theta\sin4\theta+\cos4\theta=(\sin2\theta+\cos2\theta)2−2\sin2\theta\cos2\theta$
Since$\sin^2\theta+\cos^2\theta=1, \sin2\theta+\cos2\theta=1$, we rewrite:
$\sin^4\theta+\cos^4\theta=1−2\sin^2\theta\cos^2\theta\sin4\theta+\cos4\theta=1−2\sin2\theta\cos2\theta$
Also, we use the identity:
$\sin^2\theta\cos^2\theta=14\sin^22\theta\sin2\theta\cos2\theta=41\sin22\theta$
$\sin^4\theta+\cos^4\theta=1−12\sin^22\theta\sin4\theta+\cos4\theta=1−21\sin22\theta$
greatest value of$\sin^4\theta+\cos^4\theta\sin4\theta+\cos4\theta$ when$\sin^22\theta=0\sin22\theta=0$, giving:
$\sin^4\theta+\cos^4\theta=1\sin4\theta+\cos4\theta=1$
Thus, the greatest value is **1**.

S64. Ans.(a)
Sol. Given:
A number N is successively divided by 2, 3, and 5, giving the remainders:
Remainder when divided by 2: 1

Remainder when divided by 3: 2
Remainder when divided by 5: 3
Last quotient: 1
Solution:
Let the last quotient be Q = 1, so before dividing by 5, the number was:
N1 = 5 × 1 + 3 = 8
Before dividing by 3:
N2 = 3 × 8 + 2 = 26
Before dividing by 2:
N = 2 × 26 + 1 = 53
Remainder when 53 is divided by 13:
53 ÷ 13 = 1 remainder 153

S65. Ans.(c)
Sol. Given:
Centre of the circle is at (2,3), equation of the line is 4x+3y-7=0
Formula Used:
Distance from a point to a line: d =(|Ax+By+C|)(A2+B2)(A2+B2)(|Ax+By+C|)
Solution:
Distance from (2,3) to the line:
$d=(|4(2)+3(3)-7|)(42+32)=(|8+9-7|)\sqrt{(16+9)}=(|10|)5=2d=(42+32)(|4(2)+3(3)-7|)=\sqrt{(16+9)}(|8+9-7|)=5(|10|)=2$
Therefore, the radius is 2 units.

S66. Ans.(a)
Sol. Given:
AE is diameter
∠AOC = 100°
Concept Used:
In a triangle , two angle are equal if there opposite sides are equal
Angle made by arc to the circle is always equal.
Solution:



Now, in△CEO△CEO
OE = OC (radius)
∠OCE=∠CEO=x(opposite angle)∠OCE=∠CEO=x (opposite angle)
2x = 100 (external angle sum)
x = 50
Now,∠CDE=∠CAO(anglebyarcCE)∠CDE=∠CAO(angle by arc CE)
In△AOC△AOC
AO = OC (radius)
∠CAO=∠OCA=y(opposite angle)∠CAO=∠OCA=y (opposite angle)
So,
∠AOC+∠ACO+∠OAC=180°100+2y=1802y=80y=40°∠AOC+∠ACO+∠OAC=180° 100+2y=180 2y=80 y=40°
∠CAO=∠CDE=40°∠CAO=∠CDE=40°
$\angle CDE + \angle CEA = 40 + 50 = 90^0$

S67. Ans.(d)
Sol. Given:
α + β = 45°
(tan α+1)(tan β+1) = 2x

Formula Used:
For, a + b = 45° or 225°
(tan a + 1)(tan b + 1) =2
Solution:
So, by formula,
α + β = 45°
(tan α+1)(tan β+1) = 2
So,
2x = 2
x = 1

S68. Ans.(d)
Sol. Given:
The natural numbers from 1 to 59.
Concept Used:
The average of the first n natural numbers is given by the formula:
Average =Sum of numbersTotal numbersTotal numbersSum of numbers
The sum of the first n natural numbers is given by the formula:
Sum =n(n+1)22n(n+1)
Solution:
Total numbers = 59
Sum of numbers from 1 to 59
=59(59+1)2259(59+1)
=59(60)2=1770259(60)=1770
Average =177059591770 = 30

S69. Ans.(c)
Sol. Given:
Total cost = ₹720
Price reduced by ₹2 per apple.
With the reduced price, Naman could buy 4 more apples.
Solution:
Let the original price per apple be ₹x.
Number of apples he bought at 720 Rupees=720xx720.....(1)(1)
After reducing the price by ₹2 per apple,
Number of Apple Finally =720x−2x−2720 ----------(2)
So, he purchases 4 more apples.
720x−2−720x=4720x−720x+1440x(x−2)=4x−2720−x720=4 x(x−2)720x−720x+1440=4
$4x^2$ - 8x - 1440 = 0
x^2 - 2x - 360 = 0
x^2 - 20x + 18x - 360 = 0
=> x(x - 20) + 18(x - 20) = 0
=> (x - 20)(x + 18) = 0
Thus, x = 20 (since price cannot be negative).
Substitute x = 20 into Equation 1:
Number of Apples, he purchases initially=72020=3620720=36
Naman originally bought 36 apples.

S70. Ans.(c)
Sol. Given:
First equation: 0.4x + 0.16y = 1.7
Second equation: 0.3x + 0.12y = 3.4
Formula Used:
To determine the nature of the solutions, we compare the ratios of the coefficients of the variables (x and y) and the constants.
For two equations:
a1x+b1y=c1a1x+b1y=c1
a2x+b2y=c2a2x+b2y=c2

The conditions are:

Case	Condition (Ratios of coefficients)	Nature of Lines	Type of Solution
Unique solution	a1a2≠b1b2a2a1=b2b1	Intersecting lines	One unique solution
No solution	a1a2=b1b2≠c1c2a2a1=b2b1=c2c1	Parallel lines	No solution
Infinite solutions	a1a2=b1b2=c1c2a2a1=b2b1=c2c1	Coincident lines	Infinitely many solutions

Solution:
First equation: 0.4x + 0.16y = 1.7
Second equation: 0.3x + 0.12y = 3.4
Comparing the coefficients:
For x:0.40.3=430.30.4=34
For y:0.160.12=430.120.16=34
For the constants:1.73.4=123.41.7=21
Since,a1a2=b1b2≠c1c2,a2a1=b2b1=c2c1,
Thus, the system of equations represents two parallel lines that never intersect. Therefore, the system has **no solution**.

S71. Ans.(b)
Sol. Given: 15 × 2 - 48 + 4 ÷ 5 = ?

Given Sign	+	-
Interchanged Sign	÷	×

Given equation is solve by **BODMAS** rule.
OperationpreferencewiseSymbolBrackets[],,()Orders,
of(power),√(root),ofDivision÷Multiplication×Addition+Subtraction−Operation preference wiseBracketsOrders,
ofDivisionMultiplicationAdditionSubtractionSymbol[],,()(power),√(root),of÷×+−
New equation: 15 - 2 × 48 ÷ 4 + 5 = ?
15 - 2 × 12 + 5 = ?
15 - 24 + 5 = ?
20 - 24 = ?
? = **-4**
Thus, correct option is (b).

S72. Ans.(c)
Sol. Given: 98 × 14 + 6 ÷ 36 - 8 = ?

Given Sign	+	-	×	÷
New Sign	-	×	÷	+

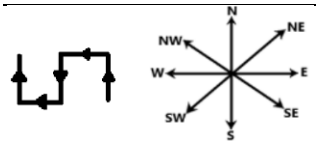
Given equation is solve by **BODMAS** rule.
OperationpreferencewiseSymbolBrackets[],,()Orders,
of(power),√(root),ofDivision÷Multiplication×Addition+Subtraction−Operation preference wiseBracketsOrders,
ofDivisionMultiplicationAdditionSubtractionSymbol[],,()(power),√(root),of÷×+−
New equation: 98 ÷ 14 - 6 + 36 × 8 = ?
7 - 6 + 36 × 8 = ?
7 - 6 + 288 = ?
295 - 6 = ?
? = **289**
Thus, correct option is (c).

S73. Ans.(a)
Sol. Given: DELIGHT
Logic: Arrange in alphabetical order.

Original	**D**	**E**	L	I	G	H	**T**
Alphabetical order	**D**	**E**	G	H	I	L	**T**

There are three letter (D, E and T) remain unchanged if each letter in the word DELIGHT is arranged in the English alphabetical order.
Thus, the correct option is **(a) Three.**

S74. Ans.(c)
Sol. Given:
Amit is facing North.
He first turns left, then again turns left, then he turns right and again turns right.
From the given information path diagram will be.



Amit facing now in **North** direction.
Thus, correct option is (c).

S75. Ans.(d)
Sol. Given: ACTIVITY

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Arranged in reverse English alphabetical order

Given Letters	A	C	T	I	V	I	T	Y
Reverse English alphabetical order	Y	V	**T**	T	I	**I**	C	A

Two letters will remain unchanged.
Thus, correct option is (d).

S76. Ans.(a)
Sol. Given: If in a code language CLASS is written as 81 and SECTION is written as 104.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Sum of opposite letters.
For, CLASS - 81
C = 3 - Opposite = 24
L = 12 - Opposite = 15
A = 1 - Opposite = 26
S = 19 - Opposite = 8
S = 19 - Opposite = 8
Total = 24 + 15 + 26 + 8 + 8 = 81
For, SECTION - 104
S = 19 - Opposite = 8
E = 5 - Opposite = 22
C = 3 - Opposite = 24
T = 20 - Opposite = 7
I = 9 - Opposite = 18
O = 15 - Opposite = 12
N = 14 - Opposite = 13
Total = 8 + 22 + 24 + 7 + 18 + 12 + 13 = 104
Similarly,
COLLEGE - ?
C = 3 - Opposite = 24
O = 15 - Opposite = 12
L = 12 - Opposite = 15
L = 12 - Opposite = 15
E = 5 - Opposite = 22
G = 7 - Opposite = 20
E = 5 - Opposite = 22
Total = 24 + 12 + 15 + 15 + 22 + 20 + 22 = **130**
So, COLLEGE is written as **130**.
Thus, correct option is (a).

S77. Ans.(a)
Sol. Given two coded sentences:
"finish the water" → "mb tk zb"
"water or juice" → "kj zb bm"
From the above -

finish the water → mb tk zb

water or juice → kj zb bm

Thus, the code of water will be **zb.**
Correct answer is (a) zb.

S78. Ans.(d)
Sol.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st letter - 1 = 2nd letter, 2nd letter - 3 = 3rd letter
Now, we check each options.
Option (a): JIF **(Follow)**
J - 1 = I, I - 3 = F
Option (b): TSP **(Follow)**
T - 1 = S, S - 3 = P
Option (c): POL **(Follow)**
P - 1 = O, O - 3 = L
Option (d): KJH **(Not Follow)**
K - 1 = J, J - 3≠= H
Thus, correct option is (d).

S79. Ans.(c)
Sol. Given:
We are to identify the **odd one out** from the list of fictional province names in **Vegereversia**.
Observation & Concept Used:
Let's examine the **structure and patterns** of each name. Try reading **each name in reverse**:

1. **PANGOTATOP** → Reversed: **POTATOGNAP**
   - Contains the word **POTATO**
2. **SULTORRAC** → Reversed: **CARRORTLUS**
   - Contains the word **CARROT**
3. **HIABIGOHON** → Reversed: **NOHOGIBAIAH**
   - Contains the word **ONION** (reversed "NOINO" inside)
4. **SINNEGABBAC** → Reversed: **CABBAGEGNENIS**
   - Contains the word **CABBAGE**

So, all names are **vegetable-related words in reverse or embedded form**.
Correct Answer: **(c) HIABIGOHON**

S80. Ans.(a)
Sol. Given: If GO=32 and SHE=49

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Sum of opposite place value of letters.

For, GO = 32
G = 7 → opposite = 27 - 7 = 20
O = 15 → opposite = 27 - 15 = 12
Sum = 20 + 12 = 32
For, SHE = 49
S = 19 → opposite = 27 - 19 = 8
H = 8 → opposite = 27 - 8 = 19
E = 5 → opposite = 27 - 5 = 22
Sum = 8 + 19 + 22 = 49
Similarly,
SOME - ?
S = 19 → Opposite = 27 - 19 = 8
O = 15 → Opposite = 27 - 15 = 12
M = 13 → Opposite = 27 - 13 = 14
E = 5 → Opposite = 27 - 5 = 22
Sum = 8 + 12 + 14 + 22 = **56**
So, SOME = **56**
Thus, correct option is (a).

S81. Ans.(b)
Sol. Given:
In a certain code language, 'eat more fruits' is coded as 'lo tk jo' and 'fruits are expensive' is coded as 'jo bk mb'.

eat more fruits = lo tk jo

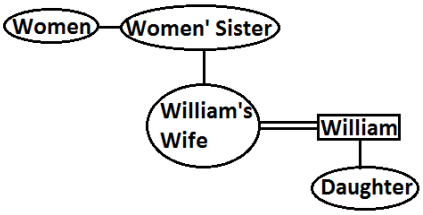
fruits are expensive = jo bk mb

So, the code of **fruits** is **jo**.
Thus, correct option is (b).

S82. Ans.(d)
Sol. Given: Pointing to a woman, William said, "Her only sister is the mother of my, daughter's mother".

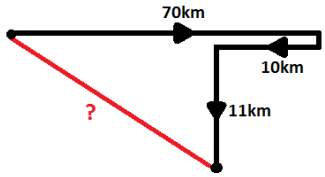
Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

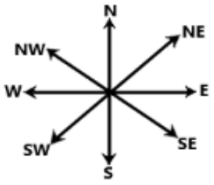
From the given information blood relation diagram will be.



Woman is **Aunt** of William.
Thus, correct option is (d).

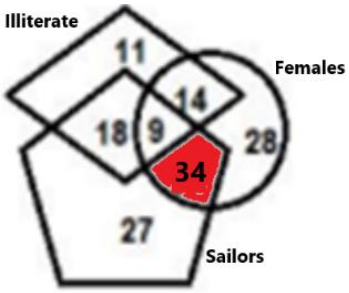
S83. Ans.(b)
Sol. Given:
Rahul walks in East direction for 70 Kms.
After that he turns to West direction and walks for another 10 Kms and finally he turns to South direction and walks for 11 Kms.
From the given information path diagram will be.





Distance =(60)2+(11)2(60)2+(11)2
=(3600)+(121)(3600)+(121)
=37213721
= **61kms**
He far from the starting point **61kms** and **south-east** direction with respect to the starting point.
Thus, correct option is (b).

S84. Ans.(b)
Sol. Given:

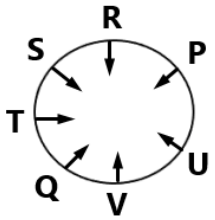


There are **34** female sailors are NOT illiterate.
Thus, the correct option is **(b).**

S85. Ans.(c)
Sol. Given: Mothers, Sales Managers, Males
From the given words Venn diagram will be:

Explanation:
Mothers are specifically females → So, "Mothers" and "Males" are totally **separate**.
Sales Managers can be **male** or **female** (so Sales Managers can overlap with both Males and Mothers).
"Mothers" and "Males" do not overlap.
"Sales Managers" overlaps with both "Mothers" (female sales managers) and "Males" (male sales managers).
Hence, the Venn diagram should show **partial overlap** between the three.
Thus, the correct option is **(c).**

S86. Ans.(c)
Sol. Given:
P, Q, R, S, T, U and V are sitting around a circular table facing the centre.
Only two people sit between S and V when counted from the left of V.
T sits third to the left of U.
P sits to the immediate right of U.
P sits second to the left of S.
Q is an immediate neighbour of T.
From the given information Circular arrangement will be:



There are **two people** sit between **R** and **V** when counted from the right of **V.**
Thus, the correct option is **(c) 2.**

S87. Ans.(b)
Sol. Given:
Sugar : Diabetes :: Fat : _____
This is a cause-effect analogy.
Sugar is a cause that can lead to → **Diabetes**
Similarly,
Fat is a cause that can lead to → **Obesity**
Thus, correct option is (b).

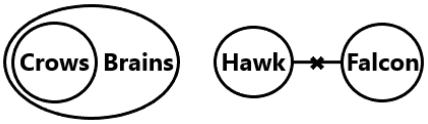
S88. Ans.(c)
Sol. Given:
9 : 725
3 : 23
Logic: cube of the first number – 4
Check for 9 : 725
9^3=729
729 – 4 =725
Check for 3 : 23
3^3=27
Now:
27 – 4 = 23
Now, check options:
(a) 8 : 315
8^3=512
512 – 4 = 508
(b) 5 : 128
5^3=125
125 – 4 = 121
(c) 4 : 60
4^3=64
64 – 4 = 60 (**Follows**)
(d) 6 : 220
6^3=216
216 – 4 = 212
Thus, correct option is (c).

S89. Ans.(b)
Sol. Given triad:
339 – 663 – 555
348 – 636 – 555
Logic: sum of the digits in all three numbers is 15.
339:
3 + 3 + 9 = 15
663:
6 + 6 + 3 = 15
555:
5 + 5 + 5 = 15
Option A: 164 – 542 – 614
164:
1 + 6 + 4 = 11
542:
5 + 4 + 2 = 11
614:
6 + 1 + 4 = 11
The sum of the digits is 11, not 15. So, Option A is **incorrect**.

Option B: 195 – 285 – 348
195:
1 + 9 + 5 = 15
285:
2 + 8 + 5 = 15
348:
3 + 4 + 8 = 15
The sum of the digits is 15 for all three numbers, so Option B is **correct**.
Option C: 161 – 512 – 710
161:
1 + 6 + 1 = 8
512:
5 + 1 + 2 = 8
710:
7 + 1 + 0 = 8
The sum of the digits is 8, not 15. So, Option C is **incorrect**.
Option D: 432 – 513 – 711
432:
4 + 3 + 2 = 9
513:
5 + 1 + 3 = 9
711:
7 + 1 + 1 = 9
The sum of the digits is 9, not 15. So, Option D is **incorrect**.
Thus, correct option is (b).

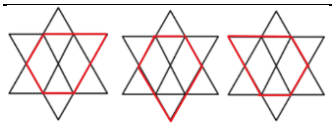
S90. Ans.(c)
Sol. (A) lion : den
Lion lives in a den → Place relationship
(B) bird : nest
Bird lives in a nest → Place relationship
(C) cat : meow
Cat makes the sound meow → Sound relationship (Different type)
(D) bee : hive
Bee lives in a hive → Place relationship
Option C will odd.

S91. Ans.(d)
Sol. Statements:
1. All crows are brains.
2. No hawk is a falcon.
From the given statements possible Venn diagram will be.



Conclusions:
I. All crows are falcons. (**False**, the statement gives no information about crows and falcons).
II. Some falcons are hawks. (**False**, there is no direct connection between falcons and hawks).
So, **neither conclusion I nor II follows.**
Thus, correct option is (d).

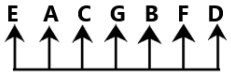
S92. Ans.(b)
Sol. In the given figure there are following regular pentagons.



Correct answer is (b) **6.**

S93. Ans.(d)
Sol. Given: 36 × 104 − 13 + 8 ÷ 38 = ?
Given ÷÷××
Interchanged- +
Given equation is solve by **BODMAS** rule.
OperationpreferencewiseSymbolBrackets[],„()Orders,
of(power),√(root),ofDivision÷Multiplication×Addition+Subtraction−Operation preference wiseBracketsOrders,
ofDivisionMultiplicationAdditionSubtractionSymbol[],„()(power),√(root),of÷×+−
New equation: 36 + 104÷÷ 13×× 8 - 38 = ?
36 + 8×× 8 - 38 = ?
36 + 64 - 38 = ?
100 - 38 = ?
? = **62**
Thus, correct option is (d).

S94. Ans.(d)
Sol. Given:
Seven people, A, B, C, D, E, F and G are sitting in a row, facing north.
Only three people sit between E and B.
G sits to the immediate left of B.
No one sits to the right of D.
Only two people sit between D and G.
C sits to the immediate right of A.
From the given information seating arrangement will be.

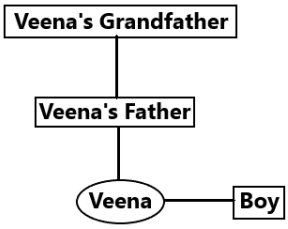


2 people sit to the right of B.
Thus, correct option is (d).

S95. Ans.(b)
Sol. Given: Pointing towards a boy, Veena said, "He is the son of only son of my grandfather".

Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

From the given information blood relation diagram will be.



Boy is the **brother** of Veena.
Thus, correct option is (b).

S96. Ans.(b)
Sol. A is at position 13 from the front
There are 2 people between A and B, and B is after A

So B is at position 13 + 3 = 16
Now remove first 8 persons
So every position shifts up by 8
B was at 16, so after removing 8 people:
B's new position = 16 - 8 = **8**
Thus, correct option is (b).

S97. Ans.(a)
Sol. Given:
There are seven persons Prakash, Nilanjan, Rohit, Jay, Saman, Sanjay and Veer whose ages are 55, 34, 56, 42, 36, 30 and 25 (all in years) but not necessarily in same order.
• Rohit who is elder brother of Jay is younger than Nilanjan.
• Sanjay is only younger than Veer but older than Saman.
• Nilanjan is the younger brother of Prakash who is 4th youngest as well as 4th oldest among group.
From the given information positions will be:

Positions	Name	Age
7	Veer	56
6	Sanjay	55
5	Saman	42
4	Prakash	36
3	Nilanjan	34
2	Rohit	30
1	Jay	25

Now, verifying the statements:
I.Saman's age is 42 years → **True**
II. Jay is youngest in all → **True**
So**, Both I and II** is true.
Thus, the correct option is: **(a)**

S98. Ans.(c)
Sol. Given: 39 × 3 + 10 – 13 ÷ 2

Original	+	÷
New	–	×

OperationpreferencewiseSymbolBrackets[],,()Orders,
of(power),√(root),ofDivision÷Multiplication×Addition+Subtraction−Operation preference wiseBracketsOrders,
ofDivisionMultiplicationAdditionSubtractionSymbol[],,()(power),√(root),of÷×+−
After changing the mathematical operation new equation will be-
39 ÷ 3 – 10 + 13 × 2
= 13 – 10 + 13 × 2
= 13 – 10 + 26
= 39 – 10
= 29
Thus, the correct answer is (c).

S99. Ans.(c)
Sol. Given:
Adya is heavier than Dilipa.
but lighter than Fiya.
Charu is lighter than Esha and heavier than Bidan, who is heavier than Fiya.
Only one student is heavier than Esha.
Only two students are lighter than Dilipa.
From the given information sequence will be:
Now, the sequence is: _ > Esha > Charu > Bidan > Fiya > Adya > Dilipa > _ > _.
Now, the total number of students in the group will be **9.**
Thus, the correct option is **(c) 9.**

S100. Ans.(a)

Sol. Given:

Seven businessmen G, H, I, J, K, L and M, travelled in the same month on different dates 4th, 8th, 11th, 14th, 17th, 22nd and 28th (but not necessarily in the same order).

L travelled the last.

K travelled just after I but before J.

K travelled on the 11th.

Only two people travelled between K and M.

Exactly one person travelled between G and K, and K travelled after G.

From the given information arrangement will be.

Dates	4th	8th	11th	14th	17th	**22nd**	28th
Businessmen	G	I	K	J	H	**M**	L

M is travel on **22nd**.

Thus, correct option is (a).