Ques 1. ANS (D) Solution:

L I F E

$12 + 9 + 6 + 5 = 32 \times 4 = 125$

R U N

$18 + 21 + 14 = 53 \times 3 = 159$

C L O U D

$3 + 12 + 15 + 21 + 4 = 55 \times 5 = 275$

Ques 2. ANS (A) Solution:

$\underset{\sqrt{4}=2}{4} \quad \underset{2\times 3}{6} \quad \underset{\sqrt{9}=3}{9}$

$\underset{2\sqrt{2}}{\sqrt{8}} \quad \underset{2\sqrt{2}\times 3\sqrt{2}}{12} \quad \underset{3\sqrt{2}}{\sqrt{18}}$

Ques 3. ANS (D) Solution:

B E H K (+3 +3 +3) W Y A C (+2 +2 +2) I J K L (+1 +1 +1) P R T U (+2 +2 +1)

Ques 4. ANS (C) Solution: All are divisible by 7 except (c).

Ques 5. ANS (A) Solution:

2 3 5

6 1 4

Ques 6. ANS (B) Solution: +7, +7, +7, +7 series.

Ques 7. ANS (B) Solution:

$(9 + 1)^2 + 1 = 101$

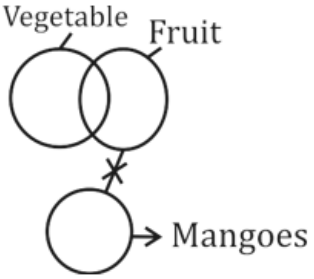
$(10 + 1)^2 + 1 = 122$

Ques 8. ANS (B) Solution:

$8 : 9 :: 24 : 25$

$2^3 : 3^2 :: 4^3 : 5^2$

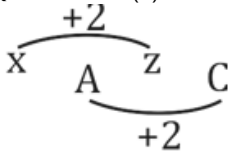
Ques 9. ANS (B) Solution:



Ques 10. ANS (D) Solution:

$\underset{+(1)^2}{0} \quad \underset{+(2)^2}{1} \quad \underset{+(3)^2}{5} \quad \underset{+(4)^2}{14} \quad \underset{+(5)^2}{30} \quad \underset{+(6)^2}{55} \quad 91$

Ques 11. ANS (C) Solution:



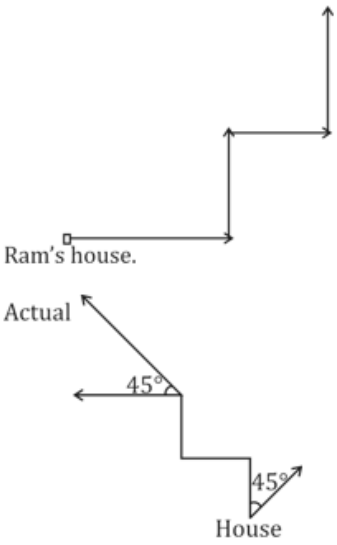
Ques 12. ANS (B) Solution: Number of triangle are increasing

Ques 13. ANS (C) Solution:

Ques 14. ANS (C) Solution:

Deaf : hear similarly Vission : Blind ness.

Ques 15. ANS (C) Solution:



Ques 16. ANS (B) Solution: 1st and 3rd latter are follow +3, +3 And 2nd latter follow –2, –3, –4, –5

Ques 17. ANS (B) Solution:

Ques 18. ANS (C) Solution:

Ques 19. ANS (D) Solution:

Ques 20. ANS (C) Solution:

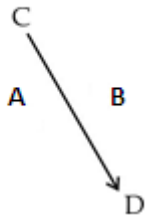
Ques 21. ANS (B) Solution:

Ques 22. ANS (D) Solution:

Ques 23. ANS (B) Solution: The pattern between the corresponding letters of next term is –3, +1, +2

Ques 24. ANS (B) Solution:

South-east



Ques 25. ANS (C) Solution:

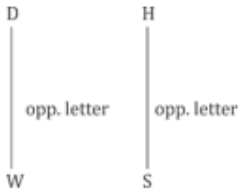
Ques 26. ANS (B) Solution:

Ques 27. ANS (A) Solution:

D O C T O R

6 5 7 1 5 2

Ques 28. ANS (C) Solution:



All have same logic except (c)

Ques 29. ANS (A) Solution:



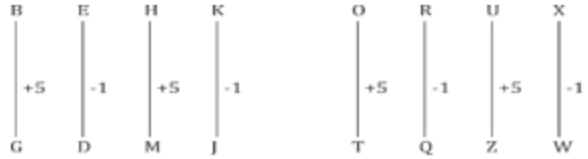
1st letter- +1 logic
2nd letter- -1 logic
3rd letter- -1 logic

Ques 30. ANS (A) Solution: A numismatis collect coins , Similarly a philatelist collects stamps
Ques 31. ANS (D) Solution: 9 x 7 = 63 All have same logic except (d)
Ques 32. ANS (A) Solution:
6 – 20 + 12 x 7 ÷ 1= 70

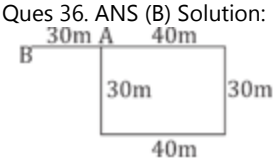
70 = 70
Ques 33. ANS (C) Solution: 2 5 1 4 3
Ques 34. ANS (A) Solution:

$9 : (85) \qquad 7 : 53$
$(9)^2 + 4 \qquad (7)^2 + 4$

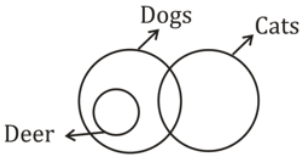
Ques 35. ANS (C) Solution:



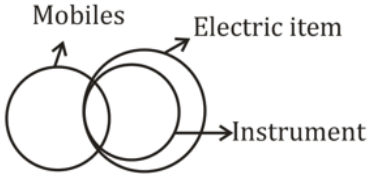
Ques 36. ANS (B) Solution:



Ques 37. ANS (D) Solution:



Ques 38. ANS (D) Solution:



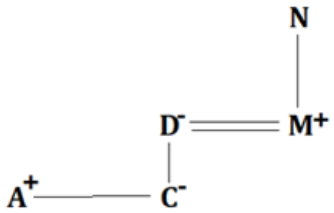
Ques 39. ANS (A) Solution:

$2 \rightarrow 5 \rightarrow \boxed{1}$
$2 \rightarrow 3 \rightarrow \boxed{4}$

Ques 40. ANS (C) Solution: School → Education → Recruitment → Employment → Salary → promotion.
Ques 41. ANS (B) Solution: 24
Ques 42. ANS (B) Solution:

$2^2 \times 4 = 16$
$3^2 \times 6 = 54$
$3^2 \times 5 = 45$

Ques 43. ANS (A) Solution:
Ques 44. ANS (D) Solution:
Ques 45. ANS (C) Solution:
Ques 46. ANS (C) Solution: (x2+1) , (x2-1) SERIES
Ques 47. ANS (C) Solution: SQUARE SERIES
Ques 48. ANS (D) Solution:



Ques 49. ANS (B) Solution: Let the age of sakhsam , tanu and Raam are X , Y and Z respectively
X – Y = 12 .....(I)
X +5 +Y+7 = 84
X+Y = 72 .....(II)
After solving equation (i) and (ii)
X = 42
Y = 30
Z = 60% OF 30 = 18
After 10 year = 18 +10 = 28
Ques 50. ANS (B) Solution: N is not present in given word
Ques 51. ANS (C) Solution: The East India Company received a Royal Charter from Queen Elizabeth I on 31 December 1600.
Ques 52. ANS (A) Solution: The 24-day Salt Satyagraha march began from 12 March 1930 and continued until 6 April 1930 as a direct action campaign of tax resistance and nonviolent protest against the British salt monopoly, and it gained worldwide attention which gave impetus to the Indian independence movement and started the nationwide non co-operation movement.
Ques 53. ANS (B) Solution: Francisco De Almeida is the first Viceroy of Portuguese in India. He is appointed as viceroy in 1505 till 1509.
Ques 54. ANS (B) Solution: The early English settlement in India consists of area of Calcutta, Madras and Bombay presidency.
Ques 55. ANS (C) Solution: The "Blue Water" policy is attributed to Francisco de Almeida, the first Viceroy of the Portuguese possessions in India.
Ques 56. ANS (C) Solution: Alauddin Khilji made several sweeping reforms in the field of revenue system. He imposed house tax (Ghari) and pasture tax (chari) on the agrarian population.
Ques 57. ANS (D) Solution: The Sikh Khalsa Army Khalsa or simply Sikh Army was the military force of the Sikh Empire, formed in 1799 with the capture of Lahore by Ranjit Singh.
Ques 58. ANS (B) Solution: Vikramashila was established by King Dharmapala (783 to 820 AD) in response to a supposed decline in the quality of scholarship at Nalanda.
Ques 59. ANS (D) Solution: Cyclones is called Typhoons in Japan and Philippines. A typhoon is a tropical cyclone that develops between 180° and 100°E in the Northern Hemisphere. This region is referred to as the Northwestern Pacific Basin.
Ques 60. ANS (C) Solution: Metamorphic rocks arise from the transformation of existing rock types, in a process called metamorphism, which means "change in form". Some examples of metamorphic rocks are gneiss, slate, marble, schist, phyllite and quartzite.
Ques 61. ANS (D) Solution: Crater is the bowl-shaped opening at the top or side of a volcano or top of a geyser through which lava and gases are emitted.
Ques 62. ANS (C) Solution: The most notable physical feature of Japan is the Fossa Magna, great rift lowland that traverses the widest volcanoes of the southern part of the East Japan Volcanic Belt.
Ques 63. ANS (C) Solution: The Caspian Sea is the largest inland body of water in the world and accounts for 40 to 44% of the total

lacustrine waters of the world. The coastlines of the Caspian are shared by Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan.
Ques 64. ANS (B) Solution: Soo Locks is built in 1855, these locks connect Lake Superior to Lake Huron.
Ques 65. ANS (C) Solution: The glass or steel which is used in thermos bottle is coated with a silver layer to keep drinks at the same temperature for some time.
Ques 66. ANS (A) Solution: Although Fluorine has the highest electronegativity, Chlorine has the highest electron affinity.
Ques 67. ANS (A) Solution: Metal oxides are crystalline solids that contain a metal cation and an oxide anion. They typically react with water to form bases or with acids to form salts. Bases are substances that, in aqueous solution, release hydroxide (OH-) ions, are slippery (soapy) to the touch.
Ques 68. ANS (B) Solution: Plaster of Paris is a white powdery slightly hydrated calcium sulfate $CaSO4•{}^{1}/_{2}H2O$ or 2CaSO4•H2O made by heating gypsum and used chiefly for casts and molds in the form of a quick-setting paste with water.
Ques 69. ANS (B) Solution: A meristem is the tissue in most plants containing undifferentiated cells (meristematic cells), found in zones of the plant where growth can take place.
Ques 70. ANS (A) Solution: It covers without any intercellular space and protects all parts of the plant. Epidermal cells on the aerial parts of the plant secrete a waxy, water-resistant layer on their outer surface. It checks the loss of water, mechanical injury and invasion by parasitic fungi.
Ques 71. ANS (D) Solution: In evolutionary biology, parasitism is a relationship between species, where one organism, the parasite, lives on or in another organism, the host, causing it some harm, and is adapted structurally to this way of life.
Ques 72. ANS (B) Solution: The processes which maintain body functions and are necessary for survival are called life processes. The important life processes are nutrition, transportation, metabolism, reproduction, respiration, and excretion.
Ques 73. ANS (C) Solution: Somatosensory Receptor(s) is a cell or group of cells specialized to detect changes in the environment and trigger impulses in the sensory nervous system.It is a receptor to detect touch in human being.
Ques 74. ANS (A) Solution: The modern economy is not characterized by self-sufficient village system.
Ques 75. ANS (D) Solution: An imperfect market refers to any economic market that does not meet the rigorous standards of a hypothetical perfectly (or "purely") competitive market. Market imperfections of a country are reflected in Price rigidity, Factor immobility & Lack of specialization.
Ques 76. ANS (B) Solution: Deindustrialization is a process of social and economic change caused by the removal or reduction of industrial capacity or activity in a country or region, especially heavy industry or manufacturing industry.
Ques 77. ANS (B) Solution: The One Rupee note is issued by Government of India and it bears the signatures of Finance Secretary, while other notes bear the signature of Governor of RBI.
Ques 78. ANS (B) Solution: Acchan Maharaj is related with Kathak Dance, he is the father of Birju Maharaj.
Ques 79. ANS (D) Solution: During uniform motion of an object along a straight line, the change in velocity of the object for any time interval is zero.
Ques 80. ANS (A) Solution: Kesavananda Bharati v. The State of Kerala in 1973 is a landmark decision of the Supreme Court of India. It is the basis for the power of the Indian judiciary to review, and strike down, amendments to the Constitution of India passed by the Indian parliament which conflict with or seek to alter the constitution's 'basic structure'.
Ques 81. ANS (B) Solution: The Securities and Exchange Board of India (SEBI) is the regulator for the securities market in India. It was established in the year 1988 and given statutory powers on 30 January 1992 through the SEBI Act, 1992
Ques 82. ANS (D) Solution: Bicameral legislature is a legislative system having two-tier of Assemblies.The two houses in state legislature are called – Legislative Assembly and Legislative Council. Bihar, Karnataka, and Uttar Pradesh all the mentioned States have Leguslative Council.
Ques 83. ANS (A) Solution: Before the framing of the constitution started, an Objectives Resolution (the resolution that defined the aims of the Assembly) was moved by Jawaharlal Nehru in 1946. This resolution enshrined the aspirations and values behind the Constitution making.
Ques 84. ANS (B) Solution: Rajya Sabha member has tenure of 6 years.
Ques 85. ANS (C) Solution: Akhtari Bai Faizabadi, also known as Begum Akhtar (Mustri Bai) was a well-known Indian singer of Ghazal, Dadra, and Thumri genres of Hindustani classical music.
Ques 86. ANS (C) Solution: According to Lenz law, the polarity of the induced emf is such that it opposes the change in magnetic flux responsible for its production. Lenz's law states that the direction of an induced e.m.f. will be such that if it were to cause a current to flow in a conductor in an external circuit, then that current would generate a field that would oppose the change that created it. This illustrates that Lenz's law is a result of energy conservation.
Ques 87. ANS (B) Solution: The frictional force exerted by fluids is known as drag.
Ques 88. ANS (A) Solution: When an object is taken to high altitude, its potential energy increases.
Ques 89. ANS (B) Solution: Tritium is a naturally occurring radioactive form of hydrogen that is produced in the atmosphere when cosmic rays collide with air molecules.
Ques 90. ANS (A) Solution: The most electrically conductive element is silver, followed by copper and gold.
Ques 91. ANS (A) Solution: Hydrophytes are Aquatic plants require special adaptations for living submerged in water, or at the water's surface.
Ques 92. ANS (C) Solution: Chlorophyll containing autotrophic thallophytes is called Algae.
Ques 93. ANS (A) Solution: Comptroller and Auditor General of India (CAG) is the supreme body for audit and accounts in India. He is the guardian of the public purse and controls the entire financial system of the country at both levels i.e. state and central. The All India Services (AIS) comprises Civil Services of India, namely the Indian Administrative Service (IAS), the Indian Forest Service (IFS) and the Indian Police Service (IPS)
Ques 94. ANS (D) Solution: The bilateral naval exercise 'Konkan ' is between the Navy of Indian and United Kingdom.
Ques 95. ANS (B) Solution: Kati Bihu or Kongali Bihu is celebrated to bring peace and prosperity in Assam.
Ques 96. ANS (D) Solution:
असम सरकार को सितंबर-अक्टूबर में मेगा वृक्षारोपण अभियान के लिए बुधवार को नौ गिनीज वर्ल्ड रिकॉर्ड्स प्रमाणपत्र प्राप्त हुए। असम के मुख्यमंत्री हिमंत बिस्वा सरमा ने राज्य के 'अमृत बृक्ष आंदोलन' के लिए गिनीज वर्ल्ड रिकॉर्ड्स के निर्णायक स्वप्रिल डांगरीकर से प्रमाण पत्र प्राप्त किया। अभियान के हिस्से के रूप में, 17 सितंबर को एक ही दिन में राज्य भर में व्यावसायिक रूप से मूल्यवान वृक्ष प्रजातियों के कुल 1,11,17,781 पौधे लगाए गए। संपूर्ण अभ्यास 'जनभागीदारी' मॉडल में भागीदारी के माध्यम से किया गया था। स्वयं सहायता समूह, आशा कार्यकर्ता, आंगनवाड़ी कार्यकर्ता, शैक्षणिक संस्थान, पुलिस कर्मी, चाय बागान कार्यकर्ता, सरकारी अधिकारी और अन्य नागरिक। The Assam government on Wednesday received nine Guinness World Records

certificates for its mega tree plantation drive in September-October. Assam Chief Minister Himanta Biswa Sarma launched the state's 'Amrit Vriksha Andolan'. Received a certificate from Guinness World Records adjudicator Swapnil Dangrikar for. As part of the campaign, a total of 1,11,17,781 saplings of commercially valuable tree species were planted across the state in a single day on September 17. The entire exercise 'public participation' This was done through participation in the model. Self Help Groups, Asha workers, Anganwadi workers, educational institutions, police personnel, tea garden workers, government officials and other citizens.

Ques 97. ANS (A) Solution:
पाकिस्तान क्रिकेट टीम के दिग्गज आलराउंडर मोहम्मद हफीज (Mohammad Hafeez Retirement) ने अंतरराष्ट्रीय क्रिकेट से संन्यास की घोषणा कर दी है. हफीज के संन्यास की जानकारी अंतरराष्ट्रीय क्रिकेट काउंसिल ने ट्वीट कर दी. हफीज ने पाकिस्तान के लिए अपना आखिरी मैच टी-20 विश्वकप 2021 में खेला था. उन्होंने अंतरराष्ट्रीय क्रिकेट में पाकिस्तान के लिए 12780 रन बनाए हैं. पिछले कुछ सालों से केवल टी-20 क्रिकेट ही खेल रहे थे. उन्होंने अपना आखिरी वनडे मैच 2019 में बांग्लादेश के खिलाफ खेला था.

Ques 98. ANS (A) Solution: The book "Atal Ji Ne Kaha" is authored and compiled by Brijendra Rehi, who is Doordarshan producer & senior journalist.

Ques 99. ANS (C) Solution:
रक्षा मंत्री राजनाथ सिंह ने भारतीय तटरक्षक बल (आईसीजी) से देश की तटीय सुरक्षा और समुद्री क्षमताओं को मजबूत बनाने की दिशा में पूरे समर्पण और पेशेवर अंदाज के साथ लगातार काम करने का आह्वान किया है। नई दिल्ली में आयोजित 40 वें तटरक्षक कमांडरों के सम्मेलन का उद्घाटन करते हुए खोज, बचाव और प्रदूषण प्रतिक्रिया के क्षेत्र में अग्रणी रहकर समुद्री सुरक्षा सुनिश्चित करने के लिए भारतीय तटरक्षक बल की प्रशंसा की। राजनाथ सिंह ने कहा कि आईसीजी ने अपनी स्थापना के बाद से, सभी परिस्थितियों में नाविकों की सुरक्षा सुनिश्चित करने के बारे में उनकी महत्वपूर्ण सेवा की है। उन्होंने प्रतिबंधित पदार्थ और मादक पदार्थों की तस्करी के खिलाफ अभियान जारी रखने की जरूरत पर भी जोर दिया। Defense Minister Rajnath Singh has called upon the Indian Coast Guard (ICG) to continuously work with full dedication and professionalism towards strengthening the country's coastal security and maritime capabilities. While inaugurating the 40th Coast Guard Commanders' Conference held in New Delhi, he praised the Indian Coast Guard for ensuring maritime safety by being a pioneer in the field of search, rescue and pollution response. Rajnath Singh said that the ICG, since its inception, has rendered vital service to seafarers in ensuring their safety in all circumstances. He also stressed the need to continue the campaign against contraband and drug trafficking.

Ques 100. ANS (C) Solution: The United States and Israel officially quit the United Nations Educational, Scientific and Cultural Organization (UNESCO) with the close of 2018. The countries had announced their decisions in 2017 of withdrawing from the agency, accusing it of bias against Israel.

Ques 101. ANS (D) Solution:

$$\text{Since } \frac{p}{q} = 2 \text{ i.e. } p=2q$$

$$\text{And } \frac{r}{p} = 4 \text{ i.e. } r=4p=8q$$

$$\text{Now } \frac{2(p^2+r^2)}{8q^2} = \frac{2\{(2q)^2+(8q^2)\}}{8q^2} = \frac{136q^2}{8q^2} = 17$$

Ques 102. ANS (C) Solution:

Let the initial speed be x km/h and initial time be 't' hours

ATQ

$$\frac{48}{x} = t \dots\dots\dots (i)$$

$$\text{And, } \frac{48}{x+8} = \frac{t}{3} \dots\dots\dots\dots (ii)$$

From (i) and (ii)

$$\frac{3 \times 48}{x+8} = \frac{48}{x}$$

$$x = 4\ km/h$$

50% of initial speed= 2 km/hr

Ques 103. ANS (C) Solution:

Let the fraction be $\frac{x}{y}$

ATQ

$$\frac{x+1}{y+1} = \frac{2}{3}$$

$$3x - 2y = -1 \dots\dots\dots\dots (i)$$

$$\text{And } \frac{x-1}{y-1} = \frac{1}{2}$$

=2x-y=1.....(ii)

From (i) and (ii), we have

x=3 and y=5

so, required fraction=$\frac{3}{5}$

Ques 104. ANS (B) Solution:

Let the cost price of a pen be Rs a

Then cost price of 20 pens= Rs 20a

Selling price of 1 pen= Rs $\frac{20a}{x}$

ATQ

$$=\frac{20a}{x} = \frac{125}{100} \times a$$

x=16

Ques 105. ANS (C) Solution:

$$\sqrt[3]{5832}\ of\ 51 \div 3 \times \sqrt{1444} \div (111 + 2\ of\ 111 \div 111 - 111)$$

$$= 18\ of\ 51 \div 3 \times 38 \div (111 + 2 - 111)$$

$$=18\ of\ 51 \div 3 \times 38 \div 2$$

$$=18\times 51 \div 3 \times 19$$

$$=5814$$

Ques 106. ANS (A) Solution:

$(p+q+r)^2=21^2$

$(p^2+q^2+r^2)+2pq+2qr+2pr=441$

$2(pq+qr+pr)=441-189=252$

$pq+qr+pr=126$

$r^2+r(q+p)=126$

$r(p+q+r)=126$

$21r=126$

$r=6$

Ques 107. ANS (A) Solution:

Female who lost their job in manufacturing industry

$$= \frac{40}{100} \times \frac{86.4}{360} \times 54000$$

= 5184

females who lost job in marketing industry = $\frac{5184}{4} \times 5 = 6480$

number of males who have lost their job in marketing industry = $\frac{79.2}{360} \times 54000 - 6480 = 5400$

Ques 108. ANS (D) Solution:

$$\text{Required difference} = (90 + 57.6 - 79.2 - 46.8) \times \frac{54000}{360} = 3240$$

Ques 109. ANS (B) Solution:

$$\text{Required \%} = \frac{\frac{86.4+90+79.2}{3} - 57.6}{57.6} \times 100 = 48\%$$

Ques 110. ANS (C) Solution:

Let the work be 72 units (LCM of 24 and 72)
Efficiency of (A+B+C)= 3 units/day
Efficiency of A+B= 1 unit/ day
Efficiency of C=2 units/day
Efficiency of B=$1 \times \frac{2}{3} = \frac{2}{3} unit/day$
Required time=$\frac{72}{2+\frac{2}{3}} = 27\ days$

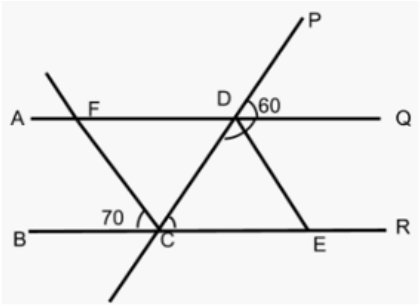
Ques 111. ANS (A) Solution: Total of nine numbers=9x44=396
Total sum of last four numbvers=46x4=184
Fifth number=396-159-184=53
20% of 53=10.6

Ques 112. ANS (C) Solution:
sin4θ=cos5θ
i.e. 4θ+5θ=90^0
θ=10^0
Now,
cot6θtanθ+cosec3θcosec6θ+$sin^3$9θsec6θ= $cot60^0$ $tan30^0$+$cosec30^0$ $cosec60^0$+sin^390^0 $sec60^0$
=$\frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{3}} + 2 \times 1 + 1 \times 2 = \frac{13}{3} = 4\frac{1}{3}$

Ques 113. ANS (A) Solution:
Ratio of area of two smaller sides will be $(4)^2$: $(3)^2$ i.e. 16: 9
And the sum of area of equilateral triangle drawn on both the smaller side of right triangle is equal to the area of equilateral triangle drawn on hypotenuse.
So, required difference=$75 \times \frac{7}{25} = 21\ cm^2$

Ques 114. ANS (C) Solution:
$$\frac{100+a}{100} \times 1040 = \frac{100-a-5}{100} \times 1664$$
$$=(100+a) \times 5 = (100-a-5) \times 8$$
$$=500+5a = 760-8a$$
a=20
20% of 800=16

Ques 115. ANS (C) Solution:



∠PDQ=60^0
Then, ∠DCE=60^0 (complimentary angle)
And ∠QDC=180-60=120^0
Here, FC is parallel to DE, so ∠FCD=∠CDE
∠FCD=180-(60+70) =50^0= ∠CDE
So, ∠RED=∠DCE+∠CDE=60+50=110^0

Ques 116. ANS (D) Solution:
$(11)^{-3/2} \times 11\sqrt{11} \times (11)^3 \div (11)^{-1/2} \times 11 = (11)^{(a-1)}$
$=(11)^{-3/2} \times (11)^{3/2} \times (11)^3 \div (11)^{-1/2} \times 11 = (11)^{(a-1)}$
$=1 \times (11)^3 \div (11)^{-1/2} \times 11 = (11)^{(a-1)}$
$=3+\frac{1}{2}+1 = (a-1)$
$a=5\frac{1}{2}$

Ques 117. ANS (D) Solution:
Given eight digits number X51YXY63 is divisible by 9
i.e. $X+5+1+Y+X+Y+6+3 = 2(X+Y)+15$ must be divisible by 9
so, 2(X+Y) will be either 3/12/21
i.e. 2(X+Y) = 12
X+Y=6
Here, X=6, Y=0
X=1, Y=5
X=5, Y=1
X=2, Y=4
X=4, Y=2
X=3, Y=3
6 pairs are possible.

Ques 118. ANS (B) Solution:
ATQ
∠P+∠R=180^0
3x+18+2x+12=180
x=30
∠S=2.5x=75^0
And ∠Q=180-75=105^0
Required difference=$105-75=30^0$

Ques 119. ANS (A) Solution:
Prime factor of 65=5× 13
Prime factor of 104=2× 2 × 2 × 13
HCF= 13
And LCM=5× 8 × 13 = 520
ATQ
13=30m-107
m=4
and 520=60n-20
n=9
required ratio=9: 4

Ques 120. ANS (C) Solution:
$$\frac{1}{cosec\theta - cot\theta} - \frac{1}{sin\theta} = 1$$
$$=\frac{(1-cos\theta)(cos\theta)}{(1-cos\theta)sin\theta} = 1$$
$cot\theta = 1$
$\theta = 45^0$
cos(π/2-θ) = $cos45^0$=$\frac{1}{\sqrt{2}}$

Ques 121. ANS (B) Solution: Let the unit digit be y and tens digit be x
Then the number=10x+y
ATQ
10x+y+10y+x=88
x+y=8.....(i)
and x-y=2.....(ii)
or y-x=2.....(iii)
from (i) and (ii)
x=5 and y=3
number=10x+y=53
from (i) and (iii)
y=5 and x=3
number=10x+y=35
required difference=53-35=18

Ques 122. ANS (B) Solution:
∠AOB=2×∠ACB=120^0
Length of arc AB=2πr×$\frac{120}{360} = 2 \times \frac{22}{7} \times 3.5 \times \frac{1}{3} = \frac{22}{3}$ cm
Circumference of the circle=2πr=$2 \times \frac{22}{7} \times 3.5 = 22\ cm$
Length of OACBO=$22+3.5+3.5-\frac{22}{3} = 21\frac{2}{3} cm$

Ques 123. ANS (D) Solution:

$=\frac{sin\theta+cos\theta}{cos\theta-sin\theta}-\frac{cos\theta-sin\theta}{cos\theta+sin\theta}$

$=\frac{(sin\theta+cos\theta)^2-(cos\theta-sin\theta)^2}{cos^2\theta-sin^2\theta}$

$=\frac{4sin\theta cos\theta}{cos^2\theta--sin^2\theta}=\frac{2sin2\theta}{cos2\theta}=2tan2\theta$

Ques 124. ANS (A) Solution:

$7(1-x)=(\frac{127}{25}+\frac{13x}{5})$

$\Rightarrow 7-7x=\frac{127}{25}+\frac{13x}{5}$

$\Rightarrow \frac{13x}{5}+7x=7-\frac{127}{25}$ $\Rightarrow x=1/5$

Now, $7x+\frac{149}{25}=4x^2+Y$

$\Rightarrow Y=7.2$

$2Y=14.4$

Ques 125. ANS (D) Solution:

Runs scored in first 15 overs=11x15=165

Runs needed to score in last 5 overs=228-165=63

Required run rate$=\frac{63}{5}=12.6$ runs per over

Ques 126. ANS (A) Solution:

Invested amount$=\frac{15000\times100}{8\times5}=Rs\ 37{,}500$

Cumulative interest for the first year$=5+5+\frac{25}{100}=10.25\%$

Interest in 1st year$=37{,}500\times\frac{10.25}{100}=$ Rs. 3843.75

Ques 127. ANS (B) Solution:

Let the distance travelled be 'd' km

And the time taken initially be 't' hours

Original speed$=\frac{d}{t}$ km/h

New speed$=\frac{3d}{2t}$ km/hr

Required ratio$=\frac{\frac{3d}{2t}-\frac{d}{t}}{\frac{d}{t}}\times100=50\%$

Ques 128. ANS (C) Solution:

One diagonal of the rhombus (d1)$=\frac{32}{4}=8$ cm

Let the side of equilateral triangle be 'a' cm

Area$=\frac{\sqrt{3}}{4}\times a^2=\sqrt{3}$

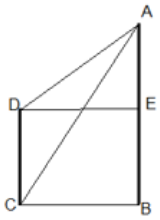
a=2

so, other diagonal of the rhombus (d2)=2 cm

area of the rhombus$=\frac{1}{2}\times d1\times d2=\frac{1}{2}\times8\times2=8$ cm^2=0.0008 m^2

Ques 129. ANS (A) Solution:

Let AB be the building and CD be a tree



$\angle ACB=60^0$ and $\angle EDA=45^0$ and AB=18 m

In triangle ABC,

Tan $60^0=\frac{AB}{BC}$

$=\sqrt{3}=\frac{18}{BC}$

$BC=6\sqrt{3}$

Now in triangle ADE

Tan $45^0=\frac{AE}{DE}$

i.e. $AE=DE=BC=6\sqrt{3}$

height of the tree=AB-AE=$18-6\sqrt{3}=6\sqrt{3}(\sqrt{3}-1)m$

Ques 130. ANS (B) Solution:

Each internal angle in a regular polygon$=(2n-4)\times\frac{90}{n}$

Each external angle in a regular polygon$=\frac{360}{n}$

ATQ

$\frac{(\frac{360}{n})}{(2n-4)\times\frac{90}{n}}=\frac{2}{3}$

$\frac{4}{2n-4}=\frac{2}{3}$

$n=5$

Sum of all internal angles of a polygon=(2n-4)x90=6x90=540^0

Ques 131. ANS (B) Solution:

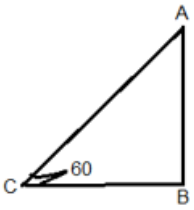
required %$=\frac{10+12+18+11}{75}\times100=68\%$

Ques 132. ANS (D) Solution:

Required average$=\frac{35\times9+45\times15+55\times10+65\times12+75\times18+85\times11}{75}=61.4\%$

Ques 133. ANS (C) Solution: Required difference=(12+18+11)-(9+15+10)=7

Ques 134. ANS (A) Solution:



Tan $60°=\frac{AB}{BC}$

$\sqrt{3}=\frac{AB}{12}$

$AB=12\sqrt{3}$ m

Sin $60°=\frac{AB}{AC}$

$\frac{\sqrt{3}}{2}=\frac{12\sqrt{3}}{AC}$

$AC=24$ m

Height of the pole= AB+AC=$12(2+\sqrt{3})$ m

Ques 135. ANS (D) Solution:

Mark price = Rs 35

Cost price $=\frac{35}{14}\times11=$ Rs 27.5

Selling price $=\frac{35\times88}{100}=$ Rs. 30.8

Profit on selling 15 articles = 15 × (30.8 – 27.5) = Rs. 49.5

Ques 136. ANS (A) Solution:

Let investment of B be 100x

So A's investment = 150x

Let period of investment of B be y months

Then period of investment of A= 2y months

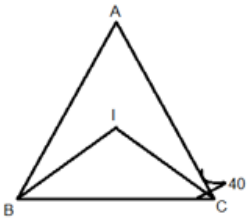
Ratio of profit share (A : B)

$\frac{150x\times2y}{100x\times y}=3:1$

ATQ

Total profit $=\frac{3250\times4}{2}=$ Rs 6500

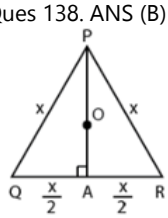
Ques 137. ANS (D) Solution:



$\angle CAB=(180-40)\times\frac{4}{7}=80^0$

So, $\angle BIC=90+\frac{\angle A}{2}=90+40=130^0$

Ques 138. ANS (B) Solution:



Centroid divides median in the ratio of 2: 1
So, OA= 6 cm
And, PO: OA=2: 1
PO= 12 cm
PA=PO+OP= 18 cm
Let the side of the triangle be 'a' cm
$\frac{\sqrt{3}}{2}\times a=18$
$a=12\sqrt{3}$ cm
area of the triangle=$\frac{\sqrt{3}}{4}a^2=108\sqrt{3}$ cm^2

Ques 139. ANS (D) Solution:

Here, $\frac{a}{b}=\frac{2}{5}$
i.e. $a=\frac{2b}{5}$
similarly, $b=\frac{3c}{2}$ and $c=\frac{4d}{3}$
so, $b=\frac{3\times\frac{4d}{3}}{2}=2d$
and $a=\frac{2\times 2d}{5}=\frac{4d}{5}$
required ratio (d: a) = 5: 4

Ques 140. ANS (C) Solution:

Required difference$=12000\times\frac{75}{100}-10500\times\frac{80}{100}=600$

Ques 141. ANS (A) Solution:

Total number of people living in sector E$=6750\times 2=13500$
Average of total number of people living in sector A and B$=10\times\frac{13500}{2\times 9}=7500$

Ques 142. ANS (D) Solution:

Total number of people living in sector C $=4500\times\frac{100}{65-35}=15000$

Ques 143. ANS (A) Solution:

Let the third side of the triangle be c cm
Then, semi perimeter s=$\frac{10+7+c}{2}$
2s=17+c
Area=$\sqrt{s(s-10)(s-7)(s-c)}=2\sqrt{66}$
$s(s-10)(s-7)(s-c)=264$
Multiplying by 16 on both the sides
2s(2s-20)(2s-14)(2s-2c)=4224
(17+c)(c-3)(c+3)(17-c)=4224=22x2x8x12
c= 5 cm
perimeter of the triangle=22 cm

Ques 144. ANS (D) Solution:

SP$=1000\times 0.8\times 0.8\times 0.8=Rs\ 512$
Profit %=$\frac{512-500}{500}\times 100=2.4\%$

Ques 145. ANS (A) Solution:

Let the bigger number is x
Then the smaller number=(x-4)
ATQ
$(x-4)\times x=525$
$x^2-4x-525=0$
$(x-25)(x+21)=525$
x=25 or -21
two numbers are=25 and 21
required difference=$25^2-21^2=84$

Ques 146. ANS (C) Solution:

Let the efficiency of a man and a child be 'm' units/day and 'c' units/day
Then, $40m\times 40=80c\times 100$
m=5c.....(i)
efficiency of a woman=1.25c units/day
let time taken by 10 men, 16 women and 30 children together to do the same work be 'd' days
then,$(10\times 5c+16\times 1.25c+30c)\times d=80c\times 100$
d=80 days

Ques 147. ANS (D) Solution:

$\frac{a}{b}=\frac{\sqrt{2}+1}{\sqrt{2}-1}$
On applying componendo and dividendo
$\frac{a+b}{a-b}=\sqrt{2}\ldots\ldots\ldots(i)$
And on squaring,
$\left(\left(\frac{a}{b}\right)^2\right)=\left(\frac{(\sqrt{2}+1)}{(\sqrt{2}-1)}\right)^2$
$\left(\frac{a^2}{b^2}\right)=\frac{3+2\sqrt{2}}{3-2\sqrt{2}}$
Now again applying C and D
$\frac{a^2+b^2}{a^2-b^2}=\frac{3}{2\sqrt{2}}\ldots\ldots\ldots(ii)$
From (i) and (ii)
$\frac{a^2+b^2}{a^2-b^2}\times\frac{a+b}{a-b}=\sqrt{2}\times\frac{3}{2\sqrt{2}}=\frac{3}{2}$

Ques 148. ANS (B) Solution:

Sides of the original cube=$\sqrt[3]{4096}=16\ cm$
Let the side of a small cube be a cm
ATQ
$64a^3=4096$
$a^3=64$
a=4 cm
required difference=12 cm

Ques 149. ANS (C) Solution:

$5\left\{\frac{3x}{15}-\frac{5}{6}\right\}+1\frac{3}{5}=1.7$
$5\left\{\frac{3x}{15}-\frac{5}{6}\right\}=\frac{17}{10}-\frac{8}{5}=\frac{1}{10}$
$\frac{3x}{15}-\frac{5}{6}=\frac{1}{50}$
$\frac{x}{5}=\frac{64}{75}$
$x=\frac{64}{15}=4\frac{4}{15}$

Ques 150. ANS (C) Solution:

We know sin(x-y)=(sinx cosy)-(siny cosx)
And cos(x-y)=cosxcosy+sinxsiny
So, $\left(\frac{\sin(60+\theta)\cos(15+\theta)-\sin(15+\theta)\cos(60+\theta)}{\cos(60+\theta)\cos(15+\theta)+\sin(60+\theta)\sin(15+\theta)}\right)^{10}=\left(\frac{\sin(60+\theta-15-\theta)}{\cos(60+\theta-15-\theta)}\right)^{10}=\left(\frac{\sin 45}{\cos 45}\right)^{10}=1$

Ques 151. ANS (C) Solution: The principal clause is in past tense thus "I had no money" will replace "I have no money".

Ques 152. ANS (A) Solution: It's is a contraction of "it is" or "it has" while ' its' is a possessive determiner we use to say that something belongs to or refers to something. In the given sentence it refers to the country's macro-economic stability hence, we need to replace

"it's" with "its". Also, there is no need to use an article so, remove 'the' used after 'its'.
Ques 153. ANS (C) Solution: Replace 'is'with 'are'. Here precedent of who is "voters" which is plural in nature so it will take plural helping verb "are" with it.
Ques 154. ANS (A) Solution: Use "loses" in place of "lose" because victimhood here is singular in nature.
Ques 155. ANS (D) Solution:
Ques 156. ANS (B) Solution: Here we need to show the purpose for stopping thus we need to use "to +V1". Replace "to + drinking" with "to + drink".
Ques 157. ANS (B) Solution: Some words like hardly, seldom, scarcely etc. are negatively used, so we need positive question tag. Replace "hasn't he" with "has he".
Ques 158. ANS (B) Solution: Demand means to ask for something firmly. Here demanding is the right usage.
Ques 159. ANS (A) Solution: "Not only _____ but also" is correlative conjunctions. Sentence structure is as follows:
Not only + Aux. verb + Subject
Hence, **Not only did they go** is the right usage.
Ques 160. ANS (D) Solution:
Ques 161. ANS (D) Solution:
Ques 162. ANS (C) Solution:
Ques 163. ANS (B) Solution:
Ques 164. ANS (A) Solution:
Ques 165. ANS (D) Solution:
Ques 166. ANS (D) Solution: Refer to the first paragraph "The Delhi government's proposal to make metro and bus travel free for women not only encourages women to use public transport more, but also allows them to occupy public spaces more and exercise their right to work and commute much more freely."
Ques 167. ANS (D) Solution: Refer to the second paragraph "women's choices about work are determined by their commuting experience, including the availability of modes of transport, distance of the workplace from their residence, presence of other women during commute, and safety of the overall route. For many families, it is the cost of commute that determines their choice of work."
Ques 168. ANS (D) Solution: Refer to "Ecologically too, in a polluted city like Delhi, universalising cheap access to public transport and disincentivising private vehicles as much as possible is the need of the hour."
Ques 169. ANS (D) Solution: Refer to "those arguing that this move would reinforce the idea that women are the 'weaker sex' often turn a blind eye to the notion of equality when it comes to acknowledging large gender pay gaps, how women rampantly indulge in unpaid labour, or how public spaces are visibly gendered (there is a near absence of women on the streets of Delhi after a particular time)." Thus option D is correct.
Ques 170. ANS (B) Solution:
If something reinforces an idea or opinion, it provides more proof or support for it and makes it seem true.

Fortify means to make something stronger, especially in order to protect it.
Ques 171. ANS (A) Solution: Variety is the spice of life means new and exciting experiences make life more interesting.
Ques 172. ANS (A) Solution: Tongue-in-cheek means in an ironic or insincere way.
Ques 173. ANS (D) Solution: When it rains, it pours means something good or bad occurs multiple times in a short span of time.
Ques 174. ANS (D) Solution: Pull the plug means to prevent something from happening or continuing.
Ques 175. ANS (C) Solution: To speak daggers means to speak harshly or maliciously so as to hurt the listener.
Ques 176. ANS (A) Solution: **Agnostic** means a person who believes that nothing is known or can be known of the existence or nature of God.
Panathenaic means of or relating to a panathenaea, a festival in honor of the goddess Athena.
Altruistic means showing a disinterested and selfless concern for the well-being of others; unselfish.
Pantheism is the belief that the universe (or nature as the totality of everything) is identical with divinity, or that everything composes an all-encompassing, immanent God.
Ques 177. ANS (C) Solution: **Avarice** means extreme greed for wealth or material gain.
An **antiquary** is a person who studies the past, or who collects or buys and sells old and valuable objects.
An **actuary** is a business professional who deals with the measurement and management of risk and uncertainty.
Apostate is a person who renounces a religious or political belief or principle.
Ques 178. ANS (A) Solution: Anile means of or resembling a doddering old woman.
Ques 179. ANS (C) Solution: **quarantine** means a state, period, or place of isolation in which people or animals that have arrived from elsewhere or been exposed to infectious or contagious disease are placed.
Contagious means (of a disease) spread from one person or organism to another, typically by direct contact.
Congruous means in agreement or harmony.
Sinecure is a position requiring little or no work but giving the holder status or financial benefit.
Ques 180. ANS (D) Solution: **Dilettante** means a person who cultivates an area of interest, such as the arts, without real commitment or knowledge.
Demagogue is a political leader who seeks support by appealing to the desires and prejudices of ordinary people rather than by using rational argument.
Coquette is a flirtatious woman.
Narcissist is a person who has an excessive interest in or admiration of themselves.
Ques 181. ANS (B) Solution: **Conjecture**: an opinion or conclusion formed on the basis of incomplete information.
Surmise: to suppose that something is true without having evidence to confirm it.
Synchronous:existing or occurring at the same time.
Coetaneous: having the same age or date of origin; contemporary.
Coeval: having the same age or date of origin; contemporary.
Ques 182. ANS (D) Solution: **Febrile**: having or showing the symptoms of a fever.
Feverish means having or showing the symptoms of a fever.
Ques 183. ANS (A) Solution:
Quail: feel or show fear or apprehension.

Tremble: be in a state of extreme apprehension.
Ques 184. ANS (C) Solution:
Militate: (of a fact or circumstance) be a powerful or conclusive factor in preventing.

Hence, oppose is the correct synonym.
Ques 185. ANS (A) Solution: **Nimble**: quick and light in movement or action; agile.

Languid: (of a person, manner, or gesture) having or showing a disinclination for physical exertion or effort.
Atrocious: horrifyingly wicked.
Ques 186. ANS (D) Solution: Approaches means come near or nearer to (someone or something) in distance or time. Discard means get rid of (someone or something) as no longer useful or desirable.
Ques 187. ANS (D) Solution: Ambiguities means the quality of being open to more than one interpretation; inexactness. Transparency means the condition of being transparent.
Ques 188. ANS (D) Solution: Doctrine means a belief or set of beliefs held and taught by a Church, political party, or other group. Heterodoxy means not conforming with accepted or orthodox standards or beliefs.
Ques 189. ANS (B) Solution: Inalienable: unable to be removed.
Hence option B is correct.
Ques 190. ANS (D) Solution:
Connubial: relating to marriage.

Cloistered: kept away from the outside world; sheltered.
Ques 191. ANS (B) Solution: assemble means gather together in one place for a common purpose.
Ques 192. ANS (A) Solution: reverent means feeling or showing deep and solemn respect.
Ques 193. ANS (B) Solution: Leniency means the fact or quality of being more merciful or tolerant than expected; clemency.
Ques 194. ANS (A) Solution: clinched means grapple at close quarters, especially (of boxers) so as to be too closely engaged for full-arm blows.
Ques 195. ANS (B) Solution: Correct spellings with their respective meanings are as follows:
Misprision: neglect or wrong performance of official duty.
Sororal: of or like a sister or sisters.
Bunkum: nonsense.
Brackish: (of water) slightly salty, as in river estuaries.
Thus option B is the correct answer.
Ques 196. ANS (C) Solution:
Ques 197. ANS (B) Solution: Culminate: reach a climax or point of highest development.
Ques 198. ANS (A) Solution:
Ques 199. ANS (A) Solution:
Ques 200. ANS (B) Solution: