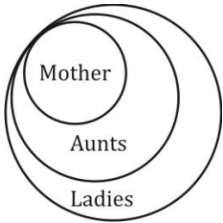**S1 Ans.(b):**
Sol. GSAT-7 was the first dedicated military communication satellite (unlike earlier dual use satellites) built by ISRO that will provide services to the Indian defence forces with the main user being the Indian Navy.

S2. Ans.(d):
Sol. Neither conclusion I nor II follows.

I ×
II ×

S3. Ans.(d); 21:29 is the greatest.
(a) $\frac{7}{15}$ = 0.46
(b) $\frac{15}{23}$ = 0.65
(c) $\frac{17}{25}$ = 0.68
(d) $\frac{21}{29}$ = 0.72
   option (d) is the greatest

S4. Ans.(a):
Sol. Coffee is not a staple food.

S5. Ans.(b):
Sol. In 1990, CONCERT (Country-wide Network for Computerized Enhanced Reservation & Ticketing) developed by CRIS is a total networking solution to Indian Railways Passenger Reservation System.

S6. Ans.(c):
Sol. Calcium carbonate (Chalk) is a chemical compound, with the chemical formula $CaCO_3$.

S7. Ans.(a):
Sol. Harry Potter and the Cursed Child is a British two-part stage play written by Jack Thorne based on an original story by Thorne, J. K. Rowling and John Tiffany.

S8. Ans.(c):
Sol. 3.5x=0.07y

y=50x

$\frac{y-x}{y+x} = \frac{49}{51}$

S9. Ans.(c):
Sol. Article 29 protects the interests of the minorities by making a provision that any citizen / section of citizens having a distinct language, script or culture have the right to conserve the same.

S10. Ans.(a):
Sol. LCM (6, 7, 8, 9, 12)=504

$x = 504 - (6 - 2)$

$x = 500$

150% of $x = \frac{500 \times 150}{100} = 750$

S11. Ans.(a):
Sol. a²+b²+c²=ab+bc+ca

a=b=c

(a+b+c)²=(3a)²=9a²

S12. Ans.(a):
Sol. The basic element of mathematics are numbers and of history are events.

13 Ans.(b):
Sol. Facebook is a social networking service launched as FaceMash in July 2003, but later changing to The Facebook on February 4, 2004. It was founded by Mark Zuckerberg with his college roommate and fellow Harvard University student Eduardo Saverin.

14 Ans.(c):
Sol. Chemical Composition. An ozone molecule consists of three oxygen atoms (O_3).

S15. Ans.(b):
Sol. A is false but R is true.

S16. Ans.(a):
Sol. Bark is the sound made by seal .

S17. Ans.(c):
Sol. 7528-5362=2166

Similarly 4673-2507=2166

S18. Ans.(a):
Sol. S+T+U+D+E+N+T=103

S+C+H+O+O+L=72

S19. Ans.(a):
Sol. 12–12×28÷ 7+15
=12–12×4+15 =–21

S20. Ans.(c):
Sol. On the night of 1 July 2015, Cecil was wounded with an arrow by Walter Palmer, an American dentist and recreational big-game hunter, then tracked and killed with a bow and arrow.

S21 Ans.(a):
Sol. A calorie is a unit that is used to measure energy. The Calorie you see on a food package is actually a kilocalorie, or 1,000 calories.

S22 Ans.(c):
Sol. The average adult has about 1.2 to 1.5 gallons (4.5 to 5.5 liters) of blood circulating inside their body.

S23 Ans.(d):
Sol. Simon Electronic Game, 1978. The Father of the Video Game was also the inventor of Simon. Inventor Ralph Baer is best known for developing the first video game system.

S24. Ans.(a):
Sol. Let salary of boyfriend=100x
Then Salary of Sunita=118.25x
Boyfriend earns% less than Sunita = $\frac{18.25}{118.25} \times 100\%$ = 15.43   16%

S25. Ans.(a):
Sol. Ratio = 7:2

S26. Ans.(b):
Sol. The bat is traditionally made from willow wood, specifically from a variety of white willow called cricket bat willow (Salix alba var. caerulea), treated with raw (unboiled) linseed oil, which has a protective function.

S27. Ans.(b):
Sol. A battery is just a device that converts chemical energy into electrical energy. In each of these four cells, there are two reactions taking place, one that creates electrons and one that uses them, and when those electrons flow, that's what we call electricity.

S28. Ans.(a):
Sol. sum of complements =90°
Let complement =x
Then, other angle =$\frac{x}{2}$+ 30
Now $(x) + (\frac{x}{2}+ 30) = 90°$
$\frac{3x}{2} = 60$
$x = 40°$, other angle = 50°
Difference = 50°–40° =10°

3

S29. Ans.(d):
Sol. $f(x) = x^6 - x^4 - x^5 - x^4 - 4 = 0$
Put x=1
   1-1-1-1-4=-6≠0
So, (x−1) is not a factor of factor
Put x=−1
   1−1+1−1−4=−4≠0
   (x+1) is not a factor of f(x)
Neither (x−1) nor (x+1)

S30. Ans.(c):
Sol. The Third Battle of Panipat took place on 14 January 1761 at Panipat, about 60 miles (97 km) north of Delhi, between a northern expeditionary force of the Maratha Empire and invading forces of the King of Afghanistan, Ahmad Shah Abdali.

S31. Ans.(d):
Sol. A gas that contributes to the greenhouse effect by absorbing infrared radiation. Carbon dioxide, Methane and chlorofluorocarbons are examples of greenhouse gases. Oxygen is not greenhouse.

S32. Ans.(c):
Sol. Stars are made of very hot gas. This gas is mostly hydrogen and helium, which are the two lightest elements. Stars shine by burning hydrogen into helium in their cores, and later in their lives create heavier elements.

S33. Ans.(b):
Sol. The actual division of British India between the two new dominions was accomplished according to what has come to be known as the "3 June Plan" or "Mountbatten Plan". It was announced at a press conference by Mountbatten on 3 June 1947.

S34. Ans.(d):
Sol. Interest = $50 \times \frac{10}{100} \times 6$ =30

S35. Ans.(c):
Sol. Effectively
7−5=8−6.
2   6
ie, 1   3.
So, numbers are 5×3, 6×3 =15,18

S36. Ans.(b):
Sol. 4÷2+6=2+6=8

S37. Ans.(c):
Sol. Invention of Stainless Steel. In 1913, Harry Brearley of Sheffield, UK discovered 'rustless' steel. Although there had been many prior attempts, Brearley has been credited with inventing the first true stainless steel, which had a 12.8% chromium content.

S38. Ans.(b):
Sol. BORDER   579649
Eliminate B.
ORDER = 79649

S39. Ans.(b):
Sol. Cirrhosis is when scar tissue replaces healthy liver tissue.Cirrhosis is a long-term (chronic) liver disease. The damage to your liver builds up over time. The liver is your body's largest internal organ.

S40. Ans.(d):
Sol. Second Bus speed = $\frac{270}{15}$ = 18 $km/\ r.$
Now speed of 1st Bus = $\frac{18 \times 11}{9}$
=22 km/hr

S41. Ans.(c):
Sol. The first budget of Independent India was presented by the first finance minister R K Shanmukham Chetty.

S42. Ans.(b):
Sol. The first SMS message was sent over the Vodafone GSM network in the United Kingdom on 3 December 1992, from Neil Papworth of Sema Group (now Mavenir Systems) using a personal computer to Richard Jarvis of Vodafone using an Orbitel 901 handset. The text of the message was "Merry Christmas."

S43. Ans.(a):
Sol. McAfEE is a Anti-virus software.

S44. Ans.(a):
Sol. A is true but R is false.

S45. Ans.(a):
Sol. S×A=120_____(i)
3A=S+2_____(ii)
   A= $\frac{(S+2)}{3}$
By (i) and (ii).
$\frac{S \times (S+2)}{3}$ = 120
S= 18

S46. Ans.(a):
Sol. Let CP=100x
SP = 60x.
Now.
60x+125=110x
   50x=125
x=2.5
   CP=100×2.5=250

S47. Ans.(c):
Sol. I–2 =G
R–3=0
O–4=K
M–5=I
  K–2 = I
N–3 = K
I–4 = E
F–5=A
E–6=Y
   IKEAY

S48. Ans.(a):
Sol. Sania Mirza has been awarded the Padma Bhushan award 2016.

S49. Ans.(b):
Sol. ATM means "At The Moment" or "Automated Teller Machine.

S50. Ans.(b):
Sol. SP=12
CP=10
% profit = $\frac{12-10}{10} \times 100$
=20%

S51. Ans.(c):
Sol. Bhoja (reigned c. 1010–1055 CE) was an Indian king from the Paramara dynasty. His kingdom Some literary works suggest that Bhoja succeeded his uncle Munja as the Paramara king.

S52. Ans.(a):
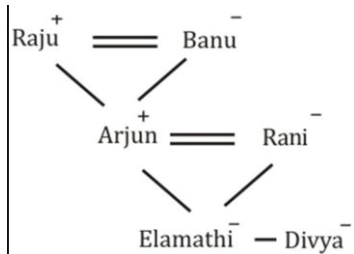Sol. Mother gives birth to child. Similarly, Cloud is the reason for rain.

S53. Ans.(c):
Sol. Population Variation
=(Deviation)^2 =7^2 =49

S54. Ans.(c):
Sol.

S55. Ans.(d):
Sol. Arjun & Rani

S56. Ans.(a):
Sol. Sisters

S57. Ans.(c):
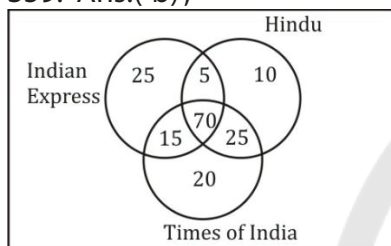Sol. Interest for 3rd years = PR $(1+R)^2$, when R=$\frac{40}{100}$

=2000 $\times \frac{2}{5} \times (\frac{7}{5})^2$ =$\frac{2000 \times 2 \times 49}{125}$

= $16 \times 2 \times 49$ =16×98 =1568

S58. Ans.(a):
Sol. Jamaican author Marlon James has won the Man Booker Prize for his novel inspired by the attempted assassination of Bob Marley in the 1970s. Michael Wood, chair of the judges, described A Brief History of Seven Killings as the "most exciting" book on the shortlist.

S59. Ans.(b);

S60. Ans.(c);

S61. Ans.(b);

S62. Ans.(d):
Sol. 6x+2y=2 – (i)
on dividing by 2 throughout
3x+y=1   (i)
3x+y=c_2
  C_2 = 1
63 Ans.(d):
Sol. The highest number of person-days of work to be generated under MGNREGS .Rural Employment Guarantee Scheme (MGNREGS)had generated a of drought conditions with the ministry announcing an increase of 50 days.

S64. Ans.(d):
Sol. 14528 = 83×d+3
14525=83d
  d=$\frac{14525}{83}$ = 175

S65. Ans.(a):
Sol. In 2010 = 80L
In 2011 = $\frac{80 \times 120}{100}$ = $\frac{120 \times 4}{5}$ = 96L.
In 2012 = $\frac{96 \times 80}{100}$ = $\frac{80 \times 24}{25}$
=76.8 L

S66. Ans.(b):
Sol. Let for T
In 2010 = 100
IN 2011 = 117
In 2012 = $\frac{117 \times 92}{100} = \frac{117 \times 23}{25}$
Req. percentage = $\frac{117 \times 25}{117 \times 23} \times 100\%$
= $\frac{100}{92}$ = 108.6%
 ≈ 109% (approx)

S67. Ans.(a);

100x		2011	2012
100x	P	120x	96x
100x	Q	80x	87.2x
100x	R	105x	117.6x
100x	S	93x	79.05x
100x	T	117x	107.64x
100x	U	121x	131.89x

Of the given options R has the highest in 2012

S68. Ans.(d):
Sol.   Sunil   Gopal
Ratio of profit = 20,000×9 : 30, 000×12
18 : .36 =1:2
Sunil's shame = $\frac{1}{3} \times$ 60,000 = 20,000

S69. Ans.(a):
Sol. Coefficient of variation = $\frac{S.D}{Mean} \times 100\%$
= $\frac{5}{11} \times 100\%$ = 45.45%

S70. Ans.(c):
Sol. initial sum= 14×11 = 154
Now $\frac{154 + x}{15}$ = 12
    x=26

S71. Ans.(a):
Sol. One woman = 180 days. (36×5)
One man = $\frac{180}{3}$ = 60 $days$
Five man = $\frac{60}{5}$ = 12 days

S72 Ans.(a):
Sol. After Rabindranath Tagore gave Gandhiji the title "Mahatma", Gandhiji paying tribute to Tagore gave him the title "Gurudev". Tagore was a great guru in ideological sense too as he always advocated for unfettered learning.

S73. Ans.(d):
Sol. A+2=C
M+2=O
J+2=L
M+2=O
S+2=U
P+2=R
So, COLOUR

S74. Ans.(a):
Sol. Using C and D
$\frac{sinA}{cosA} = \frac{9}{1}$ $tanA = 9$
Now, $tan2A = \frac{2tanA}{1-\tan^2 A} = -\frac{18}{80}$ $or -\frac{9}{40}$
ATQ,
$\frac{tan2A+1}{tan2A-1} = -\frac{31}{49}$

S75. Ans .(d):
Sol. 1 person = 15×30=450 days
Now 30 persons of double efficiency
$= \frac{450}{30\times 2}$ = 7.5 days

S76. Ans.(d):
Sol. Ratio= 2:3   Square= 4:9

S77 Ans.(c):
Sol. Product bundling denotes offering several products for sale as one combined product.

S78 Ans.(c):
Sol. The Anuradhapura was the first established kingdom in ancient Sri Lanka and Sinhalese people.

S79. Ans.(b):
Sol. $\sin^2 A + \cos^2 A = 1$
Cubing both sides
$\sin^6 A + \cos^6 A + 3\sin^2 A\cos^2 A(\sin^2 A + \cos^2 A) = 1$
$\sin^6 A + \cos^6 A = 1 - 3\sin^2 A\cos^2 A$

S80. Ans.(c):
Sol. 3C ≥ 2A ___ (i)
B > C ____(ii)
   3B > 2A
   3B α 2A

S81 Ans.(a):
Sol. Wood is bad conductor of heat.

9

S82. Ans.(d):
Sol. Mosquito causes Malaria
Similarly Tobacco causes cancer
83 Ans.(b):
Sol. 2022 Commonwealth Games. The 2022 Commonwealth Games, officially known as the XXII Commonwealth Games and commonly known as Birmingham 2022,

S84. Ans.(c):
Sol. CALF
(a) DUCKLING
(b) HIRELING
(c) CUB
C Is odd, other are animal babies.

S85. Ans.(b):
Sol. $71=1+(x-1)2$
$\frac{70}{2} = n - 1$
X=36
$$S_n = \frac{x}{2}(a + l)$$
=18 (1+71) =18×72 =1296
86 Ans.(a):
Sol. About 100 lightning bolts strike the Earth's surface every second that's about 8 million per day and 3 billion each year.

S87. Ans.(d):
Sol. Both A and R are false

S88. Ans.(d):
Sol. AUNT
(a) NIECE
(b) MOTHER
(c) BROTHER
(d) is male, rest all are females.

S89 Ans.(a):
Sol. Monopoly is the form of market where there is lack of competition.

S90. Ans.(c):
Sol. a.b and d are islands.

S91. Ans.(d):
Sol. $3^2 + 2^2 = 13$
$4^2 + 7^2 = 65$

S92. Ans.(a):
Sol. LCM is 979.20

S93 Ans.(c):
Sol. Kochi has been of strategic importance to India as it is a major port city on the south westcoast of India by the Laccadive sea. It is known as the "Queen of Arabian Sea".

S94 Ans.(b):
Sol. Popularly known as the "Fairytale Castle", Neuschwanstein was built by King Ludwigs II in the honour of an Opera composer that he greatly admired; Richard Wagner. Despite the deceptive medieval architecture, it was actually built in the 19th century with state-of-the-art interiors.

S95. Ans.(c):
Sol. $5 - 0 + 3 \times 5 = 20$

S96 Ans.(a):
Sol. Transpiration is essentially evaporation of water from plant leaves.

S97 Ans.(b):
Sol. The Yarlung Tsangpo, also called Yarlung Zangbo or Yalu Zangbu is the longest river of Tibet ... After reaching Assam, the river is known as Brahmaputra.

S98 Ans.(b):
Sol. The Great Stupa at Sanchi is one of the oldest stone structures in India, and an important monument of Indian Architecture. It was originally commissioned by the emperor Ashoka in the 2nd century BCE. Its nucleus was a simple hemispherical brick structure built over the relics of the Buddha.

S99. Ans.(a):
Sol. speed $= \frac{18 \times 5}{18} = 5 \ m/s$
Perimeter = 4×50 =200
time $= \frac{200}{5} = 40 \ s$

S100. Ans.(d):
Sol. Let CP =100x
SP=95 x
95x+200=115x
20x=200
x=10
CP=1000
SP $= \frac{1000 \times 5}{4}$ =1250