

S O M N A M B U L I S M

1

S8. Ans.(a) Sol. Shan>Sathian>balan> Devan, 55 – 37 =18 year

S9. Ans.(c)

Sol. In 12 hours, they are at right angles 22 times. In 24 hours, they are at right angles 44 times.

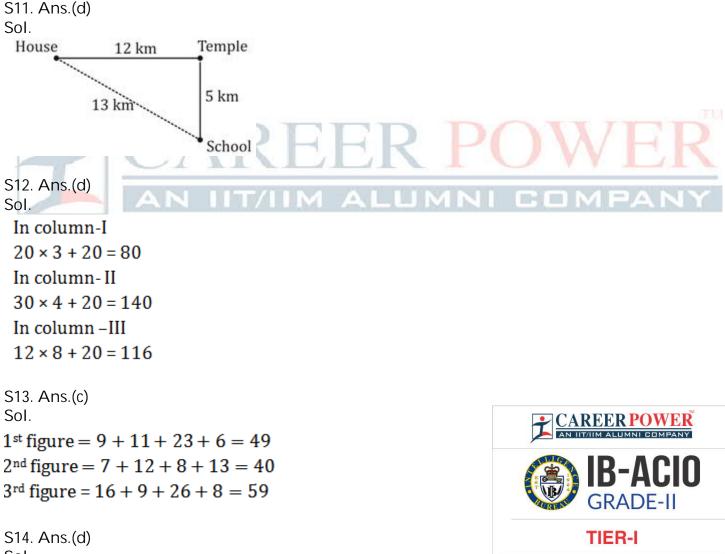
S10. Ans.(b)

Sol. 30

1	2	3	4

Number of squares = $4^2 + 3^2 + 2^2 + 1^2$

$$= 16 + 9 + 4 + 1 = 30$$



Sol.

$TRAIN \rightarrow RTANI$

First letter is exchanged with second, similarly 4th is exchanged with fifth whereas 3rd is left unchanged

 $A D D E D \rightarrow D A D D E$

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S15. Ans.(c) Sol. Here two sides are common. $1 \ 4 \ 6 \ 3 \ 2$ is opposite to 6 $1 \ 4 \ 2$
S16. Ans.(a) Sol.
Sitting Arrangement Roy Prema Madhu Geetha Bose Usha Suma Gopi
S17. Ans.(d)
S18. Ans.(d); Sol. position of letters. S19. Ans.(b) Sol. Father = F, Son = S, Grandfather = GF, Mother = M, Daughter = D LEFT D M GF F S RIGHT
S20. Ans.(d); Sol. arrow rotating in clockwise direction by 45°
S21. Ans.(c)

S22. Ans.(b)

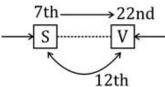
Sol. There is only one 'l' letter is the keyword. Therefore, the word MEDICINE cannot be formed

S23. Ans.(a)

S24. Ans.(c)

3

Sol.



Total number of boys in the row = 22 + 12 - 1 = 33

S25. Ans.(d);

Sol. In one step, the existing element enlarges and a new element appears inside this element. In the next step, the outer element is lost.

S26. Ans.(d)

Sol. The Third Battle of Panipat fought on January 14, 1761 between the Marathas and forces of the Afghan ruler Ahmad Shah Abdali and his allies was one of the biggest and most significant battles of the 18th century in India. At that time the rular of Delhi was Shah Alam II.

S27. Ans.(d)

Sol. Under Article-61 of the constitution of India, it is provided that president can be removed through the process of impeachment for the violation of constitution.

S28. Ans.(c)

Sol. The first concept you need to know is the business cycle, the series of fluctuations in the level of economic activity. The timing and degree of these fluctuations are notoriously unpredictable; however, there is a pattern that seems to recur with these gyrations. A hypothetical business cycle is comprised of the following phases:

A V

Peak - Contraction (Recession, Depression)- Trough: Recovery

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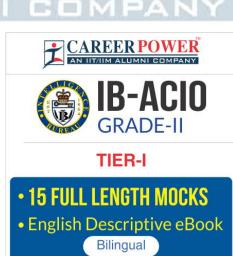
S29. Ans.(b)

S30. Ans.(c)

Sol. Best Conductor – Silver Standard Resistor- constantan Semiconductor- Silicon Insulator- Ebonite

S31. Ans.(c)

Sol. The ordinance-making power of the governor under Article 213 is similar to that of the president under Article 123. The governor can issue ordinance only when two conditions are fulfilled ; (a) the governor can only issue ordinances when the legislative assembly of a state both houses in session or where



there are two houses in a state both houses are not in session. (b) the governor must be satisfied that circumstance exist which render it necessary for him to take immediate action.

S32. Ans.(b)

Sol. Asteroids are rocky, airless worlds that orbit our sun, but are too small to be called planets. Tens of thousands of these minor planets are gathered in the main asteroid belt, a vast doughnut-shaped ring between the orbits of Mars and Jupiter. Asteroids that pass close to Earth are called near-earth objects

S33. Ans.(b)

Sol. The primary performance advantage of liquid propellants is due to the oxidizer. Several practical liquid oxidizers (liquid oxygen, nitrogen tetroxide, and hydrogen peroxide) are available which have better specific impulse than the ammonium perchlorate used in most solid rockets, when paired with comparable fuels.

S34. Ans.(d)

Sol. If area is increases flux density will be decreases because they are inversely proportional to each other

S35. Ans.(c)

Sol. India lies wholly in the northern and eastern hemispheres. The main land of India extends from 80 4' 28" N to 370 17' 53" N latitudes and from 680 7' 53" E to 970 24' 47" E longitudes. The latitudinal and longitudinal extent of India is approximately the same i.e. 300.

S36. Ans.(d)

Sol. Scarcity (also called paucity) is the fundamental economic problem of having seemingly unlimited human wants in a world of limited resources. It states that society has insufficient productive resources to fulfill all human wants and needs.

S37. Ans.(a)

Sol. Duncan pass is located between South and little Andaman. Duncan Passage is a strait in the Indian Ocean. It is about 48 km (30 mi) wide; it separates Rutland Island (part of Great Andaman) to the north, and Little Andaman to the south. West of Duncan Passage is the Bay of Bengal; east is the Andaman Sea.

S38. Ans.(a)

Sol. SadbhavanaDiwas is celebrated on the 20th of August every year to commemorate the birth anniversary of the erstwhile Prime Minister of India, Shri Rajiv Gandhi.

S39. Ans.(a)

Sol. Solder is an alloy of tin and lead used to create electrical joints. Terne plate is an alloy of tin and lead used to coat steel. Some antique pewter contains both tin and lead, sometimes in combination with other metals.

S40. Ans.(d)

Sol. Article 24 mandates that No child below age of 14 years shall be employed to work in any factory or mine or engaged in any other hazardous employment.

S41. Ans.(b)

5

Sol. 1922, Mahatma Gandhi, while explaining the meaning of Swaraj had indicated that the Constitution of India would be drafted by Indians. This was probably the first expressed intention, regarding the Indians made constitution for Indian people.

Six year later, in 1928, for the first time a constitution for India was drafted by Nehru Committee that was headed by MotiLal Nehru. A year later, in the Lahore session of December 1929, Congress

passed the PoornaSwaraj resolution. It was the same session in which Jawaharlal Nehru was elected as president of the Congress. This 41 years old anglophile, aristocratic, and only son of Motilal Nehru had dedicated all his energy for the national movement and was youngest president of Congress till that time. He later emerged as Gandhi's designated successor to congress leadership.

Here, please note that though the congress passed the PoornaSwaraj Resolution in December 1929, it was a month later on January 26, 1930, when a Pledge of Indian Independence also known as Declaration of Independence was taken.

S42. Ans.(d)

Sol. Carbon dioxide gas is responsible for the swelling of bread

S43. Ans.(b)

Sol. Vitamin B12 Content of Some Common Foods. The best sources of Vitamin B12 include: milk, eggs, cheese, milk products, meat, fish, shellfish and poultry. Some soy and rice beverages as well as soy based meat substitutes are fortified with vitamin B12.

S44. Ans.(d)

Sol. Bacillus Calmette–Guérin (BCG) vaccine is a vaccine primarily used against tuberculosis. The vaccine was originally developed from Mycobacterium bovis which is commonly found in cows. The BCG vaccine was first used medically in 1921.

S45. Ans.(a)

Sol. The Concurrent List or List-III (Seventh Schedule) is a list of 52 items (though the last item is numbered 47) given in the Seventh Schedule to the Constitution of India. The legislative section is divided into three lists: Union List, State List and Concurrent List. Education, including technical education, medical education and universities, subject to the

provisions of Entries 63, 64, 65 and 66 of List I; vocational and technical training of labour.

S46. Ans.(c)

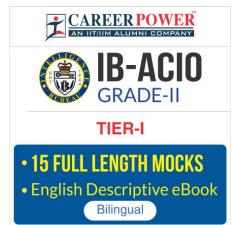
Sol. Zinc is more reactive then tin. Which may react with food items and make it unfit for health.

S47. Ans.(a)

Sol. Scurvy is a disease caused by deficiency of Vitamin-C or ascorbic acid. The symptoms of the disease are bleeding of gums and mucous membrane with spotted skin. Vitamin-C is present in all citrus fruit. It easily destroyed by heating

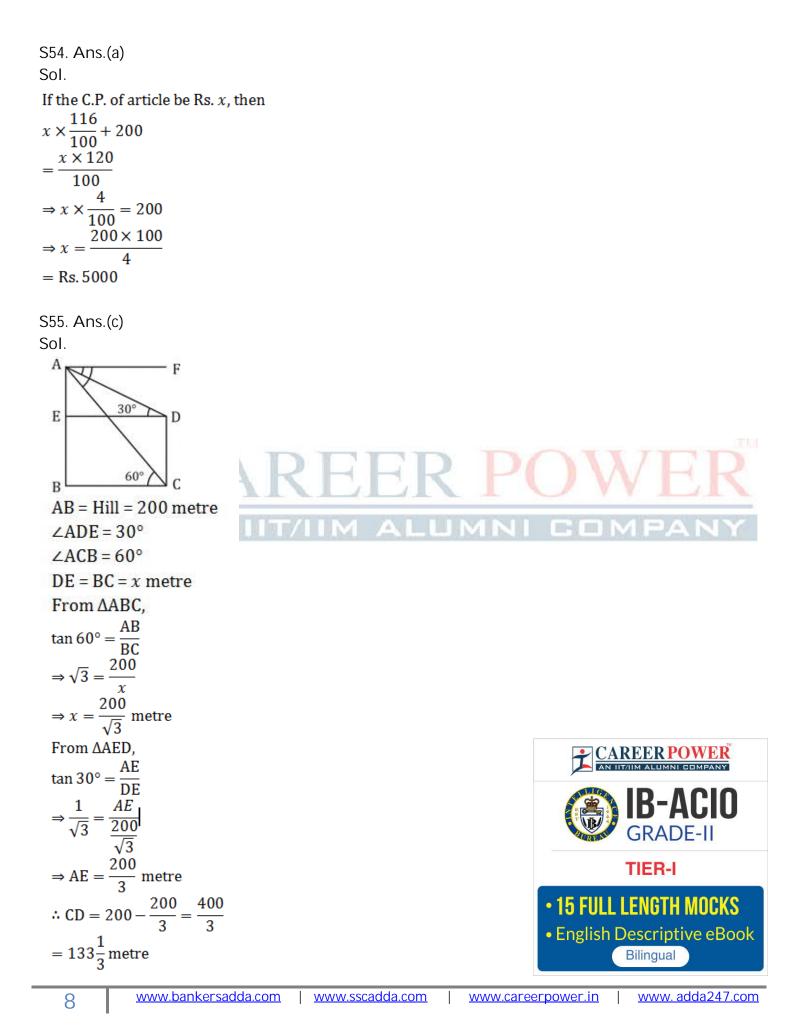
S48. Ans.(a)

Sol. NagarjunaSagar Dam was built across the Krishna river at NagarjunaSagar where the river forms the boundary between Nalgonda District in Telangana and Guntur district in Andhra Pradesh states in India. The construction duration of the dam was between the years of 1955 and 1967.



S49. Ans.(b)

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S50. Ans.(c)
Sol. the Present Chairman of NITI Ayog is ShriNarendramodi
S51. Ans.(a)
Sol.
\tan 89^\circ = \tan(90^\circ - 1^\circ) = \cot 1^\circ
\tan 88^{\circ} = \tan(90^{\circ} - 2^{\circ}) = \cot 2^{\circ}
∴ tan 1°. tan 2°. tan 3°... tan 45°... tan 87°. tan 88°. tan 89°
 = (\tan 1^\circ, \cot 1^\circ)(\tan 2^\circ, \cot 2^\circ) \dots \tan 45^\circ.
 = 1.
S52. Ans.(b)
Sol.
 9 hours 36 minutes
 =9+\frac{36}{60}=9\frac{3}{5} hours
 =\frac{48}{5} hours
 (A + B)'s 1 hour's work = \frac{5}{48} hours
 C's 1 hour's work = \frac{1}{4\Omega}
 (A + B + C)'s hour's work
 =\frac{5}{48}+\frac{1}{48}=\frac{1}{9}\dots(i)
                                                                                                   -
                                                                                                         A's 1 hours work = (B + C)'s 1 hour's work ...(ii)
 From equations (i) and (ii),
2 \times A's hour's work = \frac{1}{2}
A's 1 hour's work = \frac{1}{16}
\therefore B's 1 \text{ hour's work} = \frac{5}{48} - \frac{1}{16}
=\frac{5-3}{48}=\frac{1}{24}
∴ B alone will finish the work in 24 hours
S53. Ans.(b)
Sol.
Lowest score = x
Highest score = x + 100
 \therefore 28 \times 38 + x + x + 100 = 30 \times 40
 \Rightarrow 1064 + 2x + 100 = 1200
 \Rightarrow 2x = 1200 - 1164 = 36
 \Rightarrow x = 18
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 $\angle EOB = 180^{\circ} - 150^{\circ} = 30^{\circ}$ OE = OB $\therefore \angle OEB = \angle OBE = \frac{150}{2} = 75^{\circ}$ $\therefore \angle CBE = 180^{\circ} - 75^{\circ} = 105^{\circ}$

S59. Ans.(b) Sol. If the number of trees in the garden be x, then $x \times \frac{60}{100} \times \frac{25}{100} \times \frac{20}{100} = 1500$ $\Rightarrow x \times \frac{3}{5} \times \frac{1}{4} \times \frac{1}{5} = 1500$ x = 50000S60. Ans.(b) Sol. \Rightarrow 5 (P – Q) = (P + Q) × 3 \Rightarrow 5P - 3P = 5Q + 3Q $\Rightarrow 2P = 80$ $\Rightarrow P = 4Q$ $= 4 \times \frac{P \times x}{100}$ $\Rightarrow \frac{4x}{100} = 1 \Rightarrow x = 25$ S61. Ans.(d) Sol. $x = \frac{\sqrt{3} - \sqrt{2}}{\sqrt{2} + \sqrt{2}}$ $=\frac{(\sqrt{3}-\sqrt{2})(\sqrt{3}-\sqrt{2})}{(\sqrt{3}+\sqrt{2})(\sqrt{3}-\sqrt{2})}$ $=\frac{\left(\sqrt{3}-\sqrt{2}\right)^2}{2-2}$ $= 3 + 2 - 2\sqrt{3} \sqrt{2}$ $= 5 - 2\sqrt{6}$ $\therefore y = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}} = 5 + 2\sqrt{6}$ CAREER POWER $\therefore x + y$ $= 5 - 2\sqrt{6} + 5 + 2\sqrt{6} = 10$ $xy = (5 - 2\sqrt{6})(5 + 2\sqrt{6})$ TIER-I = 25 - 24 = 1 $\therefore x^{3} + y^{3} = (x + y)^{3} - 3xy(x + y)$ 15 FULL LENGTH MOCKS $=(10)^3 - 3(10)$ English Descriptive eBook = 1000 - 30 = 970Bilingual

S62. Ans.(d) Sol. B D C $\angle ACB = 80^{\circ}$ $\angle ACD = 180^{\circ} - 80^{\circ}$ $= 100^{\circ}$ $\therefore \angle CAD = \angle CDA$ $=\frac{80}{2}=40^{\circ}$ $\angle BAC = 111^{\circ} - 40^{\circ} = 71^{\circ}$ $\angle ABC = 180^{\circ} - 71^{\circ} - 80^{\circ} = 29^{\circ}$ S63. Ans.(c) Sol. $\frac{V_1}{V_2} \!=\! \frac{r_1^{\,2}h_1}{r_2^{\,2}h_2}$ $\Rightarrow \frac{4}{1} = \frac{25}{16} \times \frac{h_1}{h_2}$ Hy - $\Rightarrow \frac{h_1}{h_2} = \frac{16 \times 4}{25} = \frac{64}{25}$ -S64. Ans.(b) Sol. **Required** ratio $= \left(\frac{2}{3} + \frac{3}{5} + \frac{5}{8}\right) : \left(\frac{1}{3} + \frac{2}{5} + \frac{3}{8}\right)$ $=\left(\frac{80+72+75}{120}\right):\left(\frac{40+48+45}{120}\right)=227:133$ S65. Ans.(b) Sol. x: y = 3: 2 = 9: 6y: z = 3: 2 = 6: 4x: y: z = 9:6:4 $\therefore 9a + 6a + 4a = 342$ $\Rightarrow 19a = 342$ $\Rightarrow a = 342 \div 19 = 18$ $\therefore A \Rightarrow 18 \times 9 = 162$ $B \Rightarrow 18 \times 6 = 108$ $C \Rightarrow 18 \times 4 = 72$

S66. Ans.(c)
Sol.
$$A \times \frac{1}{2} = B \times \frac{1}{3} = C \times \frac{1}{4}$$
$$\Rightarrow \frac{A}{2} = \frac{B}{3} = \frac{C}{4}$$
$$\therefore A: B: C = 2: 3: 4$$
$$\therefore A \Rightarrow \frac{2}{9} \times 900 = \text{Rs. } 200$$
$$B \Rightarrow \frac{3}{9} \times 900 = \text{Rs. } 300$$
$$C \Rightarrow \frac{4}{9} \times 900 = \text{Rs. } 400$$

S67. Ans.(d) Sol.

Required average speed = $\frac{2 \times 30 \times 20}{30 + 20}$ $= \frac{2 \times 30 \times 20}{50} = 24 \text{ kmph}$

S68. Ans.(b)
Sol.

$$(1 - \frac{1}{n+1}) + (1 - \frac{2}{n+1}) + (1 - \frac{3}{n+1}) + ...(1 - \frac{n}{n+1})$$

$$= n \times 1 - (\frac{1}{n+1} + \frac{2}{n+1} + \frac{3}{n+1} + ... + \frac{n}{n+1})$$

$$= n - \frac{1+2+3+\dots+n}{n+1}$$

$$= n - \frac{n(n+1)}{2(n+1)} = n - \frac{n}{2} = \frac{n}{2}$$
S69. Ans.(c)
Sol.

$$\log(90^2 - 60^2) = \log(8100 - 3600)$$

$$= \log(4500)$$

$$= \log(90 \times 50)$$

$$= \log90 + \log 50$$

S70. Ans.(c) Sol. Possible ways to get 7 as sum 1) 3 + 4 = 7 or 4 + 3 = 72) 5 + 2 = 7 or 2 + 5 = 73) 6 + 1 = 7 or 1 + 6 = 7Total favourable event = 6 Total event = $6 \times 6 = 36$ Required probability = $\frac{6}{36} = \frac{1}{6}$ EXAMPLE ALLIMNE COMPANY S71. Ans.(b) Sol. Required ways = $6! \times 2!$ S72. Ans.(a) Sol. Expenditure of January = $60,000 \times \frac{16}{100} - 20,000 \times \frac{21}{100} = 54,000$ Expenditure of February = $60,000 \times \frac{34}{100} - 20,000 \times \frac{25}{100} = \text{Rs.} 15400$ Total Expenditure = 15400 + 5400= Rs. 20800 S73. Ans.(d) Sol. It is clearly visible that Expenditure in February will be maximum. S74. Ans.(a) Sol. Expenditure of person in March = $60,000 \times \frac{15}{100} - 20,000 \times \frac{18}{100} = \text{Rs.}5400$ Income in April = Rs. 6000 Required Percent = $\frac{5400}{6000} \times 100 = 90\%$ -S75. Ans.(c) Sol. Required Ratio = $\left(\frac{60000}{6}\right): \left(\frac{20000}{6}\right) = 3:1$

S76. Ans. (d)

Sol. Done to death meansif a particular style or subject is done to death, it is used or discussed so many times that it is not interesting any more

S77. Ans. (d) Sol. speak volumes means to reveal a great deal of information.

S78. Ans. (b) Sol. Slipshod-careless, negligent Retaliatory- an act of revenge

S79. Ans.(a) Sol. Concur-agree, be in accord Disarrange- make untidy or disordered Disappear-vanish, cease to be visible S80. Ans. (c)
Sol. Extempore- spoken or done without preparation
Thrifty- using money and other resources carefully and not wastefully
Promiscuous-immoral, debauched
Extravagant- lacking restraint in spending money or using resources

S81. Ans. (c)
Sol. Verbatim- in exactly the same words as were used originally
Postulate- Suggest, Propose, suppose, Presume
Niche- a comfortable or suitable position in life or employment
So, 'Platitude' is the one word that goes with the question

S82. Ans. (b) Sol. Danseuse- a female ballet dancer

S83. Ans. (b)

Sol. adherence means to- "sticking to" or "being faithful to

S84. Ans. (a)

Sol. "by" is the correct choice

S85. Ans. (a)

Sol. Decline of a person; use 'Decline in' something(morals)

S86. Ans. (b) Sol. medical representative is a countable noun so use article 'a' before it

S87. Ans. (a) Sol. Put 'already' after 'had' and before' told'

S88. Ans. (c)

S89. Ans. (c) Sol. 'early is an adjective' so it would be followed by a noun.

S90. Ans. (a) Sol. The correct sequence is QPRS

S91. Ans. (c) Sol. The correct sequence is RPSQ

S92. Ans. (c) Sol. The correct answer is "The doctor advised her 15 days' rest after her surgery."

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CAREER POWER

S93. Ans. (a)

Sol. The correct answer is "When were my books returned by him?"

S94. Ans. (d)

Sol. "He told me that he expected me to attend the function"

S95. Ans. (a)

Sol. He enquired why I had not sent my application to him"

S96. Ans.(c)

Sol. Refer to the third sentence of the passage "I was 27, full of assumptions about myself, quick with a comment on everything, and expected people to pay attention to all that I had said." Hence option (c) is true.

S97. Ans.(b)

Sol. Refer to the fourth sentence of the second paragraph "After twenty minutes I was thoroughly bored, and telling myself that it was difficult to sit through such an insipid talk." Hence option (b) is correct choice.

S98. Ans.(a)

Sol. Refer to the fifth sentence of the second paragraph "I wanted to share some of my expert comments with my neighbor. But he was completely sold out to the speaker, and looked like it was the greatest day of his life. I was disgusted." So option (a) is correct.

S99. Ans.(b)

Sol. Refer to the first sentence of the last paragraph "The one-hour talk took ages to end, and before the thanks were said, I jumped to my feet with a sigh of relief." Hence option (b) is true.

S100. Ans.(c)

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Sol. Refer to the first sentence of the second paragraph "I listened to the talk for the first five minutes. By the seventh, I was looking around to check if others were listening." Hence option (c) is correct.