SSC MOCK TEST – 39 (SOLUTION)
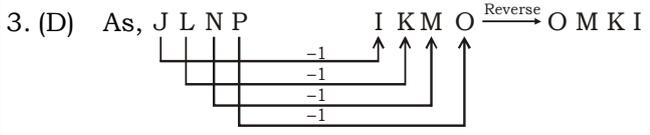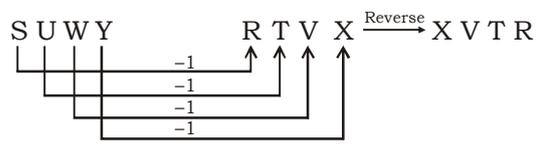
1. (A) Second denotes the part on which the effort is applied.

2. (A) According to alphabetical order C = 3 and
   3 × 5 + 1 = 16
   In the same way,
   F = 6 and 6 × 5 + 1 = 31

3. (D) As, J L N P   I K M O $\xrightarrow{\text{Reverse}}$ O M K I

   Similarly,

   S U W Y   R T V X $\xrightarrow{\text{Reverse}}$ X V T R

4. (C) An associate in a travel is called companion. Similarly, an associate in a profession is called colleague.

5. (A) One who collects stamps is called philatelist. Similarly, one who collects coins is called numismatist.

6. (A) As, E G I K   F I L O

   Similarly, F H J L   G J M P
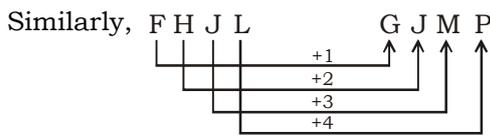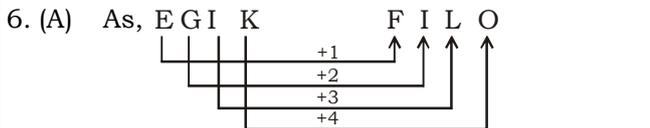
7. (D) Clearly, $3^2 + 2 = 11$,
   Now $7^2 + 2 = 51$
   So, if the first number is x, the second number is $x^2 + 2$.

8. (B) Apostate is one who renounces religion similarly, traitor is one who betrays his country.

9. (D) Coins are cost and stamped in a mint. Similarly, bricks are baked in a kiln.

10. (C) As, 1 2 3 4
        P A L E
        3 4 2 1
        L E A P
    So, 1 2 3 4
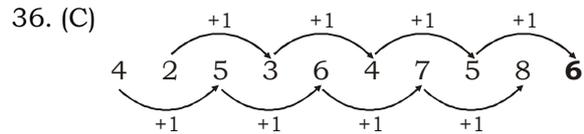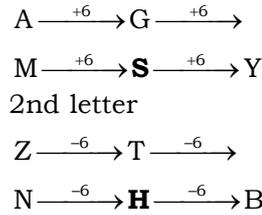   P O S H
        3 4 2 1
        S H O P

11. (C) Except Kandla, all are ranges of Himalayas, while Kandla is a sea-port in Gujarat.

12. (A) This is the only group containing a vowel.

13. (D) Each of the numbers except 144 is a perfect cube.

14. (A) Except Deuce, all terms are associated with cricket.

15. (C) In all other numbers, the sum of the digit is 28.

16. (C) In all other groups, the first and second letters occupy the same positions from the beginning and end of alphabet and so do the third and fourth letters.

17. (D) Star, Ring and Mesh are types of topology.

18. (B) Currency used in UK is sterling pound where as the rest three countries use Euro as their currency.

19. (D) The correct alphabetical order of the given words is- Intellect, Intelligent, Intend, Intense.

20. (D) B, E, A, T are respectively the 2nd, 5th, 1st, 20th letters from the beginning of the English alphabet. The letters of the code Y, V, Z, G are respectively the 2nd, 5th, 1st and 20th letters from the end of the English alphabet.
    Similarly, M, I, L, D are respectively 13th, 9th, 12th, 4th, letters from the beginning of the English alphabet and the 13th, 9th, 12th, 4th, letters from the end of the English alphabet are N, R, O, W respectively. So, the required code is NROW.

21. (B) Because of letter L used twice, the word TILL cannot be formed using the letters of originals word.

22. (B)
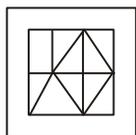
23. (D) Sumit reached at the place 20 min before 8 : 50 am. i.e., at 8 : 30 am. Clearly the man who was 40 min late would reach the place at 9 : 00 am. So, the scheduled time of the meeting was 40 min before 9 : 00 am. i.e., 8 : 20 am.

24. (D) In each set, 2nd number
    = (1st number + 9) and
    3rd number = (2nd number + 13)

25. (C) The correct sequence is
a b b/ a a b/ a b b/ a a b/ a b b/ a

26. (C) The correct sequence is $3, 3^2, 3^3, 4, 4^2, 4^3, 5, 5^2, 5^3$
So, 10 is wrong and it must be replaced by 3^2 i.e, 9.

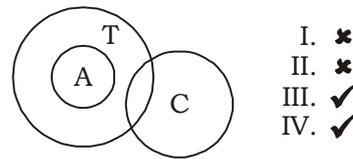27. (D) The movement of policeman is shown in the figure below.
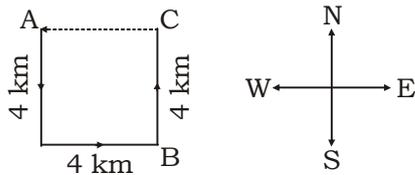
For reaching A (starting point) from C, policeman will have to move in the West direction.

28. (D) Let number of keepers be x.
Then, total number of feet
$= 2 \times 50 + 4 \times 45 + 4 \times 8 + 2x$
$= 2x + 312$
Total number of heads
$= 50 + 45 + 8 + x = 103 + x$
$\therefore (2x + 312) = (103 + x) + 224$
or $x = 15$

29. (A) As mentioned, the 7th day of the month is three day earlier than Friday, which is Tuesday. So, the 14th day is also Tuesday and thus the 19th day will be Sunday.

30. (D) $10 \times 2 \Rightarrow 10 - 2 = 8 \Rightarrow \dfrac{8}{2} = 4$

$14 \times 4 \Rightarrow 14 - 4 = 10 \Rightarrow \dfrac{10}{2} = 5$

$24 \times 12 \Rightarrow 24 - 12 = 12 \Rightarrow \dfrac{12}{2} = 6$

31. (B) Taking $Z = 2, Y = 3, ..., N = 14, ..., B = 26, A = 27$, we have
$ZIP = (Z + I + P) \times 6$
$= (2 + 19 + 12) \times 6 = 33 \times 6 = 198$
So, $VIP = (V + I + P) \times 6$
$= (6 + 19 + 12) \times 6 = 37 \times 6 = 222$

32. (C) Given equation,
$15 - 3 + 10 \times 5 \div 5$
After interchanging the signs,
$15 \times 3 - 10 \div 5 + 5 = 15 \times 3 - 2 + 5$
$= 45 - 2 + 5 = 50 - 2 = 48$

33. (A) T   R   O   K   F   Z   **S**
       −2   −3   −4   −5   −6   −7

34. (D) Each successive term exceeds by 111 over its previous term.

35. (B) 1st letter

$A \xrightarrow{+6} G \xrightarrow{+6}$

$M \xrightarrow{+6} \mathbf{S} \xrightarrow{+6} Y$

2nd letter

$Z \xrightarrow{-6} T \xrightarrow{-6}$

$N \xrightarrow{-6} \mathbf{H} \xrightarrow{-6} B$

36. (C)

37. (D) III and IV follows

I. ✘
II. ✘
III. ✔
IV. ✔

38. (A) Clearly, sum of numbers in each row is 17.
So, missing numbers
$= 17 - (4 + 7) = 6$

39. (D) As,   9   16
             ↓   ↓
           $(3)^2$ $(4)^2$
             4   36
             ↓   ↓
           $(2)^2$ $(6)^2$

Similarly, | 9   25 |
                ↓   ↓
             $(3)^2$ $(5)^2$

40. (D) In right side the number is increasing by 1.
$2 + 1 = 3, 3 + 1 = 4$ and $4 + 1 = 5$
In left side, the number is decreasing by 2.
11 $- 2 = 9, 9 - 2 = 7, 7 - 2 = 5$

41. (C) Answer figure (C) will complete the pattern of question figure.

42. (A)

43. (A)

44. (C) $3 + 1 + 4 + 2 = 10 \Rightarrow 10^2 = 100$
$5 + 2 + 3 + 5 = 15 \Rightarrow 15^2 = 225$
$6 + 4 + 5 + \mathbf{7} = 22 \Rightarrow 22^2 = 484$

45. (B)

46. (A)

47. (B) The number which is seen in both dice will be your answer. Here, the digit 4 is that number as it is a standard dice. So, 4 will be opposite of 3.

48. (A) Let the age of the elder son be x yrs.
Then, age of younger son $= (x - 15)$ yrs;
Age of the father $= 2x$ yrs
So, $2x + 10 = 3(x - 15 + 10)$

$\Leftrightarrow 2x + 10 = 3x - 15$

$\Leftrightarrow x = 25$

$\therefore$ Father's age $= 2x = 50$ yrs

49. (C) Let the fixed point from where Jatin starts his journey be A. Also, his walking directions are as follows.
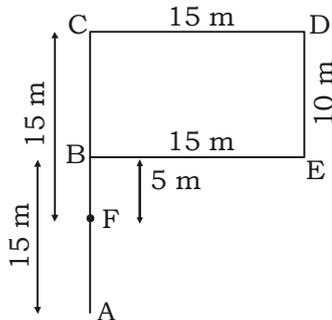
$\therefore$ AF = AB – FB

= 15 – 5 = 10 meters

So, Jatin is 10 meters away from the starting point.

50. (A) S $\rightarrow$ 00, 12, 24, 33, 41

O $\rightarrow$ 04, 13, 21, 30, 42

R $\rightarrow$ 57, 69, 78, 85, 96

T $\rightarrow$ 55, 66, 79, 88, 97

$\therefore$ SORT $\rightarrow$ **24, 21, 96, 88**

51. (A) As per the Trade Unions (Amendment) Act, 2001, no trade union of workmen shall be registered unless at least 10% or 100, whichever is less, subject to a minimum of 7 workmen engaged or employed in the establishment or industry with which it is connected are the members of such trade union on the date of making of application for registration. It also states that a registered trade union of workmen shall at all times continue to have not less than 10% or 100 of the workmen, whichever is less, subject to a minimum of 7 persons engaged or employed in the establishment or industry with which it is connected, as its members. So the minimum member required to start a trade union is 7, the only condition is they must have same problem in common.

52. (A) Under article 352 of Constitution, the President can declare such an emergency (caused by war, external aggression or armed rebellion) only on the basis of a written request by the Council of Ministers headed by the Prime Minister. Such a proclamation must be approved by the Parliament within a month.

53. (B) Shivasamudram holds the distinction of being the site of India's first hydro-electric power station which was built in 1902. It was set up mainly to supply power to the Kolar goldmines 147 km away, making the 78 KV transmission line which was the longest in the world at the time. Infact, when the Mettur dam in Tamil Nadu was being constructed in the 1930's, the power was supplied from Shivasamudram.

54. (C) Food production or agriculture is a primary activity of economy making direct use of natural resources. This includes agriculture, forestry, fishing, mining and extraction of oil & gas. This is contrasted with the secondary sector, producing manufactured and other processed goods and also the tertiary sector, producing services. Infrastructure is basic physical and organizational structures needed for the operation of a society or enterprise or the services and facilities necessary for an economy to function. The term typically refers to the technical structures that support a society, such as roads, bridges, water supply, sewers, electrical grids and telecommunications.

55. (A) Per capita Gross National Product (GNP) is the best index of development. It can be derived by dividing the GNP of a country with its population. Higher the level of per capita income, higher is the economic development. The World Bank, in its world development report 1998, classified the countries in the world on the basis of per capita GNP.

56. (A) In theory, 2 satellites in diametrically opposite geo-synchronous orbits could cover the planet. In order for the satellites to communicate, a minimum of 3 would be needed, each at a 60 degree angle to the others. At this point, the strength and quality of coverage increases proportionally to the number of satellites.

57. (A) There are six protons in Carbon-12. This 12 refers to the number of protons plus the number of neutrons. There are 6 of each in carbon-12. The number of protons in the nucleus of an atom determines an element's atomic number. The mass number of an element is the total of number of neutrons and number of protons.

59. (A) The human heart has four chambers, two superior atria and two inferior ventricles. The atria are the receiving

chambers and the ventricles are the discharging chambers.

61. **(C)** Headquarters of World Health Organisation are situated at Geneva. Regional offices: Alexandria, Brazzaville, Copenhagen, Manila, New Delhi and Washington.

62. **(A)** Jeev Milkha Singh is a golf player.

65. **(A)** Remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object. In modern usage, the term generally refers to the use of aerial sensor technologies to detect and classify objects on Earth by means propagated signals (e.g. electromagnetic radiation emitted from aircraft or satellites).

67. **(A)** Pulicat Lake: It is the second largest brackish water lake or lagoon in India which straddles the border of Andhra Pradesh and Tamil Nadu states on the Coromandal Coast in South India.

    Chilka Lake: It is a brackish water lagoon, spread over the Puri, Khurda and Ganjam districts of Odisha.

    Wular Lake: India's largest fresh water lake and one of the largest in Asia, located in Bandipora district in Jammu and Kashmir.

    Sambhar Lake: India's largest inland salt lake in south west of Jaipur and north east of Ajmer along National Highway-8 in Rajasthan.

69. **(C)** The notices of cut motions can be tabled after the presentation of Railway/General Budget. The Speaker shall decide whether a cut motion is or is not admissible and may disallow any cut motion when it is in his opinion. It is an abuse of the right of moving cut motions or is calculated to obstruct and prejudicially it affect the procedure of the House or it is in contravention of these rules.

70. **(B)** Abdul Gaffar Khan is known as Frontier Gandhi. Dadabhai Naoroji is referred to as the Grand Old Man of India.

    Madan Mohan Malaviya is called Mahamana. Vallabhbhai Patel is known as Strong Man of India.

71. **(B)** Simon Commission was primarily boycotted because it had no Indian members. The commission was a group of seven British Members of Parliament that had been dispactched to India in 1927 to study constitutional reform in India.

74. **(C)** Acquired Immuno Deficiency Syndrome (AIDS) was first reported in 1981 in San Francisco and New York. However, it was in 1983-84 that the causative virus was isolated from patients of AIDS and was named HIV in 1986.

76. **(A)** The main constituent of alcohol is Ethanol and the concentration of ethanol in a sample can be determined by back titration with acidified potassium dichromate. Reaching the sample with an excess of potassium dichromate, all ethanol is oxidized to acetic acid. One major application for this reaction is in old police breathalyzer tests. When alcohol vapour makes contact with the yellow dichromate-coated crystals, the colour changes from yellow to green. The degree of the colour change is directly related to the level of alcohol in the suspect's breath.

78. **(D)** This phenomenon is because of refraction of light. The lines of sight intersect at a higher position than where the actual rays originated. This causes the water to appear shallower than it really is.

79. **(A)** Consumer sovereignty means that buyers ultimately determine which goods and services remain in production. In unrestricted markets, those with income or wealth are able to use their purchasing power to motivate producers. So, ultimately it means how the consumers want to spend their incomes.

80. **(A)** According to the latest figures released by Government - Goa leads the country with per capita income of ₹ 1,92,652/-, while Bihar has the lowest with a per capita income of only ₹ 24,681/-. An average Goa people earns 6 times more than an average Bihari.

81. **(A)** A black body is an idealized physical body that absorbs all incident electromagnetic radiation, regardless of frequency or angle of incidence. Another property is roughness. Sand is rough and black and so it is a good absorber.

82. **(B)** Synthetic detergents are made from sodium salt of benezene sulphonic acid.

83. **(C)** The body needs access to iron to produce red blood cells. A lack of iron can lead to anaemia. Vitamin a has an essential role in vision (especially night vision), normal

bone growth, reproduction and the health of skin and mucous membranes. It also acts as an antioxidant, protecting the body from harmful free radicals which may help to reduce the risk of certain forms of cancer. Vitamin C is needed for normal growth and development, growth and repair of tissues within the body, formation of collagen, cartilage, bones and teeth and wound healing. A deficiency can result in scurvy. This cause muscle weakness, joint pain and problems with wound healing. It can also lead to loose teeth, bleeding and swollen gums, easily bruised skin and fatigue and sometimes depression. Having too little calcium in the diet increases risk of a hormone condition that can cause bone fractures and kidney stones. Primary hyperparathyroidism (PHPT) affects around one in 800 people during their lifetime and is most common in the post-menopausal women.

84. (A) The epicenter is the point on the Earth's surface that is directly above the hypocenter or the focus, the point where an earthquake or underground explosion originates. In the case of earthquakes, the epicenter is directly above the point where the fault begins to rupture and in most cases, it is the area of greatest damage. However, in larger events, the length of the fault rupture is much longer and damage can be spread across the rupture zone.

85. (D) In concept social justice is very well articulated in the Constitution of India (1950). The Preamble of our Constitution use the term 'social justice - social, economic and political, the equality of status and opportunity is provided by the Constitution makers for futuristic development of the country.

86. (C) It was written by Mohammad Iqbal and published on August 16, 1904 in the weekly journal Ittehad. It became an anthem of opposition to the British rule in India.

87. (B) The Constitution declares India to be a sovereign, socialist, secular democratic republic, assuring its citizens of justice, equality and liberty and endeavours to promote fraternity among them. The words "socialist" and "secular" were added to the definition in 1976 by the 42nd constitutional amendment. The word 'secular', though was specifically added in the Preamble in the year 1976, yet the original spirit of the Constitution was completely secular in nature. Its insertion into the Preamble has ensured that secularism has now become a source from which the constitutional provisions on secularism draw their authority and it has now become the central object which the Constitution seeks to establish. It is also one of the basic structures of our Constitution and no compromise can be made on this by any government.

88. (B) In the 16the century, a major road running across the Gangetic plain was built a fresh by Pashtun emperor Sher Shah Suri, who then ruled much of northern India. His intention was to link together the remote provinces of his vast empire for administrative and military reasons. The Sadak-e-Azam (great road) as it was then known is universally recognized as having been the precursor of the Grand Trunk Road. The road was initially built by Sher Shah to connect Agra, his capital, with Sasaram, his hometown. It was soon extended westward to Multan and eastward to Sonargaon in Bengal (now in Bangladesh).

89. (B) Energy enters an ecosystem by being used to convert low-energy carbon dioxide into high-energy carbohydrate, then passes through one or more of the organisms of the community and is then lost to the ecosystem. Eventually, all of the energy that enters the ecosystem is lost in the form of heat.

90. (A) Dr. Ambedkar attended all the three Round Table Conferences in London and each time, forcefully projected his views in the interest of the 'untouchable'. He exhorted the downtrodden sections to raise their living standards and to acquire as much political power as possible. He was of the view that there was no future for untouchables in the Hindu religion and they should change their religion if it is needed. In 1935, he publicly proclaimed, "I was born a Hindu because I had no control over this but I shall not die a Hindu".

91. (B) Kosi is known as the "Sorrow of Bihar", as it has caused widespread human suffering in the past due to flooding and very

frequent changes in course, when it flows from Nepal to Bihar. Over the last 250 years, the Kosi River has shifted its course over 120 km from east to west. Its unstable nature has been attributed to the heavy silt it carries during the monsoon season and flooding in India has extreme effects.

92. (B) Full employment refers to a situation in which every able bodied person who is willing to work at the prevailing rate of wages is employed. It implies absence of involuntary unemployment which occurs when those who are willing to work at the going wage rate do not get work.

93. (B) Electric fuse wire is an alloy made of tin (63%) & lead (37%). The cross sectional area determines the melting point at a certain current. Alloys (e.g. tin/lead) are used due to their 'eutectic' action i.e. the resulting combination of good conductivity (due to the tin) with a low melting point due to the lead.

94. (D) The most basic kind of soap is made from caustic soda and animal fat. The two are heated together and then cooled. The process is called "saponification". In technical terms, saponification involves base (usually caustic soda NaOH) hydrolysis of triglycerides, which are esters of fatty acids, to form the sodium salt of a carboxylate.

95. (A) The viruses are adaptable and versatile with many variations worldwide and they reproduce within the cells of the immune system of infected people. Therefore virus collections are indispensable instruments in the development of a vaccine. Versatility is distinctive abilities and skills in productively managing a variety of situations. Adaptability is the amount of flexibility and versatility an individual has developed to respond to changing interpersonal situations and environmental requirements.

96. (D) In computer programming, an event handler is an asynchronous callback subroutine that handles inputs received in a program. Each event is a piece of application-level information from the underlying framework, typically the GUI toolkit. GUI events include key presses, mouse movement, action selections and timers expiring. Event handlers are a central concept in event-driven programming.

97. (B) The Delhi-Lahore Bus, officially known as Sada-e-Sarhad is a passenger bus service connecting the Indian capital of Delhi with the city of Lahore, Pakistan via the border transit post at Wagah. In its inaugural run on February 19, 1999, the bus carried the then Indian Prime Minister Atal Bihari Vajpayee, who was to attend a summit in Lahore and was received by his Pakistani counterpart, Nawaz Sharif at Wagah.

98. (C) Dadabhai Naoroji was a Member of Parliament (MP) in the United Kingdom House of Commons between 1892 and 1895 and the first Asian to be a British MP.

99. (C) Bhakra Dam is a concrete gravity dam across the Sutlej River and is near the border between Punjab and Himachal Pradesh in northern India. It is India's second tallest dam at 225.55 m high next to the 261 m Tehri Dam. In terms of storage of water, it withholds the second largest reservoir in India, the first being Indira Sagar Dam in Madhya Pradesh.

100. (B) The Battle of the Hydaspes was fought by Alexander the Great in 326 BC against King Porus of the Hindu Paurava kingdom on the banks of the Hydaspes River (Jhelum River) in the Punjab. The battle resulted in a complete Macedonian victory and the annexation of the Punjab. The battle is historically significant for opening up India for Greek political (Seleucid Empire, Indo-Greeks) and cultural influence (Greco-Buddhist art) which was to continue for many centuries.

101. (C) 1 day's work of 2(A + B + C)

$$= \frac{1}{8} + \frac{1}{6} + \frac{1}{10}$$

$$= \frac{15 + 20 + 12}{120} = \frac{47}{120} \text{ part}$$

A + B + C = 1 day's work $= \frac{1}{2} \times \frac{47}{120}$ part

No. of days $= \frac{120 \times 2}{47} = \frac{240}{47} = 5\frac{5}{47}$ days

102. (B) $H_1 = 100$ $H_2 = 115$
     $R_1 = 100$ $R_2 = 90$
     Curved surface area $= 2\pi rh$
     $2\pi R_1 H_1$ $2\pi R_2 H_2$
     $\Rightarrow 100 \times 100$ $\Rightarrow 115 \times 90$
     $\Rightarrow 10{,}000$ $\Rightarrow 10350$
     $\Rightarrow 200$ $\Rightarrow 207$

Increase = 207 – 200 = 7

% increase = $\dfrac{\text{increase}}{\text{original}} \times 100\%$

$= \dfrac{7}{200} \times 100 = 3.5\%$

103. **(C)** Let the first train meet the second x hrs after its start, then
$40x + (x - 2) \times 50 = 110$ (the 2nd train takes $x - 2$ hrs. as the train starts two hours later than the 1st)
or, $90x = 110 + 100 = 210$

$\therefore x = \dfrac{210}{90}$ hrs $= \dfrac{7}{3}$ hrs $= 2\dfrac{1}{3}$ hrs

= 2 hrs 20 min. = Two trains meet at 10.20 a.m.

104. **(A)** S.I. at the rate of 4% for 2 year

$= \dfrac{P \times 4 \times 2}{100} = \dfrac{P \times 4 \times 2}{100}$ ...(i)

S.I. at the rate of 6% for next 4 year

$= \dfrac{P \times 6 \times 4}{100} = \dfrac{24P}{100}$ ...(ii)

For next 3 year

S.I. $= \dfrac{P \times 8 \times 3}{100} = \dfrac{24P}{100}$ ...(iii)

Total S.I. $= \dfrac{8P}{100} + \dfrac{24P}{100} + \dfrac{24P}{100} = \dfrac{56P}{100}$

$= ₹\,1120$

$\Rightarrow P = \dfrac{₹\,1120 \times 100}{56} = ₹\,2000$

105. **(B)**

Price(₹)	×	Qty.(kg)	=	expenses(₹)
10		10	=	100
↓(–25%)		↓(+30%)		↓(–₹2.5)
7.5	×	13	=	97.5

Reqd% $= \dfrac{-2.5}{100} \times 100 = 2\dfrac{1}{2}\%$ decrease

106. **(B)** 10W × 7D = 10C × 14D
1W = 2C
$\therefore$ 5W + 10C = 20C
$\because$ 10C takes 14 days to complete the work
Hence 20C take 7 days.

107. **(B)** C.P. of 100 cups = ₹ 100 × 10 = ₹ 1000
10 cups are broken
$\therefore$ S.P. of 90 cups = ₹ (90 × 11) = ₹ 990
Loss = ₹ (1000 – 990) = ₹ 10

$\therefore$ Loss percent $= \dfrac{10}{1000} \times 100 = 1\%$

108. **(B)**

Gold	Silver		
80	20	⇒ diff. = 300	80 20
95	5 × 4		380 20

80 + 20 i.e to make silver equal
100 units = 50g

$\therefore$ 1 unit $= \dfrac{1}{2}$ g

Difference between 80 and 380 i.e. 300 units = 150 gm.

109. **(C)** Let the present age of mother be x years.
$\therefore$ present age of son be $(30 - x)$ years
6 years ago, mother's age = $(x - 6)$ years
and son's age = $30 - x - 6 = 24 - x$ years
According to the question,
$(x - 6) - (24 - x) = 18$
$\Rightarrow x - 6 - 24 + x = 18$
$\Rightarrow 2x - 30 = 18$
$\Rightarrow 2x = 18 + 30$
$\Rightarrow 2x = 48$
$\Rightarrow x = 24$
$\therefore$ 6 years ago mother's age was
= 24 – 6 = 18 years.

110. **(B)** Cistern is filled by inlet in $3\dfrac{1}{2}$ hrs

$= \dfrac{7}{2}$ hrs.

In 1 hr it filled $\dfrac{2}{7}$ part

Cistern with leakage can be filled in 4 hrs

In 1 hr it filled $\dfrac{1}{4}$ part

In 1 hr the leakage emptied

$= \dfrac{2}{7} - \dfrac{1}{4} = \dfrac{8 - 7}{28} = \dfrac{1}{28}$ part

Leakage will take 28 hrs.

111. **(C)** First convert the ratio in ₹ 1 form

4	:	6	:	9
↓		↓		↓
4x		6x		9x
↓×5		↓×2		↓×1
20x		12x		9x

Now, Total = ₹ 410
$[20x + 12x + 9x] = 410$
$x = 10$
$\therefore$ Value of ₹ 2 coin = 12 × 10 = 120

$\therefore$ No. of ₹ 2 coin $= \dfrac{120}{2} = 60$

112. (B) Let there be x men originally, then 1 man will do the work in $60x$ days.

In the second case, 1 man does the work in $(x + 8)$ 50 days.

Now, $60x = 50(x + 8)$

$\therefore x = \dfrac{400}{10} = 40$ men

113. (B) % gain $= \dfrac{\text{Error}}{\text{True value} - \text{Error}} \times 100$

$= \dfrac{50}{950} \times 100 = 5\dfrac{5}{19}\% = 5.26\%$

114. (C) 12 months' salary = ₹ 90 + turban

$\therefore$ 9 moths's salary = (₹ 90 + turban) $\times \dfrac{9}{12}$

$= ₹ 90 \times \dfrac{3}{4} + \dfrac{3}{4}$ turban

$= ₹ \dfrac{135}{2} + \dfrac{3}{4}$ turban

$\therefore ₹ \dfrac{135}{2} + \dfrac{3}{4}$ turban

$= ₹ 65 +$ turban

$\therefore \dfrac{1}{4}$ turban $= \dfrac{135}{2} - 65 = ₹ \dfrac{5}{2}$

$\therefore$ Turban $\Rightarrow \dfrac{5}{2} \times 4 = ₹ 10$

115. (C) Male employees $= x$
Female employees $= y$
$\therefore (x + y)\ 12000 = x \times 15000 + y \times 8000$
$\Rightarrow (x + y) \times 12 = 15x + 8y$
$\Rightarrow 12x + 12y = 15x + 8y$
$\Rightarrow 3x = 4y$

$\Rightarrow \dfrac{x}{y} = \dfrac{4}{3}$

$\Rightarrow x : y = 4 : 3$

116. (A) $\dfrac{90 \times 7}{x \times 3} = \dfrac{2}{1} \Rightarrow x\dfrac{90 \times 7}{2 \times 3} = 105$

117. (D) Distance travelled by A = 2 × distance

between two points $\times \left(\dfrac{a}{a + b}\right)$

$= 2 \times 21 \times \dfrac{3}{7} = 18$ km

118. (B) $3M + 4C = \dfrac{756}{7}$

$3M + 4C = ₹ 108/\text{day}$ ...(i)

$11M + 13C = \dfrac{3008}{8}$

$11M + 13C = ₹ 376$ ...(ii)

From (i) and (ii)

Equal— $\begin{array}{l} {}_{11\times}3M + 4C = 108_{\times 11} \\ {}_{3\times}11M + 13C = 376_{\times 3} \end{array}$

$33M + 44C = 1188$
$33M + 39C = 1128$
$-\quad -\quad -$
$\overline{\qquad 5C = 60\qquad}$

$\boxed{C = 12}$

$\boxed{M = 20}$

Let the required time be x, then
$x\ (7 \times 20 + 9 \times 12) = 2480$

$x = \dfrac{2480}{248} = 10$ days

119. (B) 15% = ₹ 11250
Total amount i.e. 100%

$= \dfrac{11250}{15} \times 100 = ₹ 75000$

120. (C) +20% − 20% + (+20%) of (−20%) = − 4%

121. (C) Total income will be 7800
10% of A = 15% of B = 20% of C
If 5% = 1

then, $2A = 3B = 4C$

L.C.M = ⑫

A : B : C

$\dfrac{12}{2} : \dfrac{12}{3} : \dfrac{12}{4}$

A : B : C = 6 : 4 : 3 = Total = 13

B's income $= \dfrac{4}{13} \times 7800 = ₹ 2400$

122. (D) S.P. = ₹ 570
L% = 5%

C.P. $= \dfrac{100}{95} \times 570 = 660$

P = 5%

S.P. $= \dfrac{100 + P\%}{100} \times$ C.P.

$= \dfrac{105}{100} \times 600 = ₹ 630$

123. (A) Let the duration of flight be t hours.

$$S = \frac{D}{T}$$

$$S_1 - S_2 = 200 \text{ km/h}$$

$$\frac{600}{t} - \frac{600}{t + \frac{1}{2}} = 200$$

$$\frac{600}{t} - \frac{2 \times 600}{2t + 1} = 200$$

$(2t + 1)\,600 - t \times 1200 = 200t\,(2t + 1)$
$3(2t + 1) - 6t = t(2t + 1)$
$6t + 3 - 6t = 2t^2 + t$
$2t^2 + t - 3 = 0$
$2t^2 + 3t - 2t - 3 = 0$
$t(2t + 3) - 1(2t + 3) = 0$
$(2t + 3)\,(t - 1) = 0$
$t = 1$ hr

124. (A) Strength of milk in the first

mixture $= \dfrac{12}{12 + 3} = \dfrac{12}{15}$

Strength of milk in the second

mixture $= \dfrac{10}{10 + 4} = \dfrac{10}{14}$

∴ the ratio of their strengths

$= \dfrac{12}{15} : \dfrac{10}{14} = 12 \times 14 : 15 \times 10$

$= 28 : 25$

125. (D) We find LCM of 5, 6 and 8
$5 = 5$
$6 = 3 \times 2$
$8 = 2^3$
$= 2^3 \times 3 \times 5 = 8 \times 15 = 120$
Required number $= 120K + 3$
∴ when K = 2, $120 \times 2 + 3 = 243$
Required number
It is completely divisible by 9

126. (B) Here, 52 is a multiple of 13. Hence, the required remainder is obtained on dividing 45 by 13.
Required remainder = 6

127. (B) Let principal (present worth) for first year be P_1 and that for 2nd years be P_2.

∴ $16224 = P_1\left(1 + \dfrac{4}{100}\right)$

$\Rightarrow 16224 = P_1\left(1 + \dfrac{1}{25}\right) = \dfrac{26\,P_1}{25}$

$\Rightarrow P_1 = \dfrac{16224 \times 25}{26} = ₹\ 15600$

Again,

$16224 = P_2\left(1 + \dfrac{4}{100}\right)^2$

$\Rightarrow 16224 = P_2\left(\dfrac{26}{25}\right)^2 = \dfrac{676\,P_2}{625}$

$\Rightarrow P_2 = \dfrac{16224 \times 625}{676} = ₹\ 15000$

∴ Cash value of the scooter
$= ₹\ (16224 + 15600 + 15000)$
$= ₹\ 46824$

128. (D) Required number of wickets $= x$ (let)
According to question,
$12.4 \times x + 26 = (x + 5)\,(12.4 - 0.4) = (x + 5) \times 12$
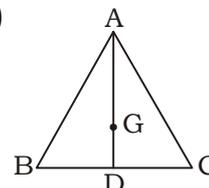$\Rightarrow 12.4x + 26 = 12x + 60$
$\Rightarrow 12.4x - 12x = 60 - 26$
$\Rightarrow 0.4x = 34$

$\Rightarrow x = \dfrac{34}{0.4} = \dfrac{340}{4} = 85$

129. (B)

$AB = 10$ cm
$BD = 5$ cm
$\angle ADB = 90°$

∴ $AD = \sqrt{AB^2 - BD^2}$

$= \sqrt{10^2 - 5^2} = \sqrt{100 - 25} = \sqrt{75}$

$= 5\sqrt{3}$ cm

$AG = \dfrac{2}{3}AD = \dfrac{2}{3} \times 5\sqrt{3} = \dfrac{10\sqrt{3}}{3}$ cm

130. (A) $x - y = k$, $x + y = 7k$
$\Rightarrow x = 4k, \ y = 3k$

$\dfrac{xy}{4} = k$
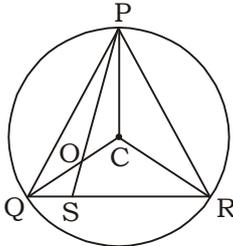
$\dfrac{4k \cdot 3k}{4} = k$

$\Rightarrow k = \dfrac{1}{3}$
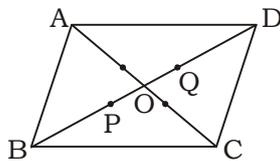
$xy = 4k = 4 \times \dfrac{1}{3} = \dfrac{4}{3}$

131. (D) Area of the floor = 8 × 6 = 48 sq. m
= 4800 sq. dm.
Area of a square tile = 4 × 4 = 16 sq. dm

∴ Number of tiles = $\dfrac{4800}{16}$ = 300

132. (B)

∠PQS = 60°
∠QCR = 130°

∴ ∠QPR = $\dfrac{1}{2}$ × 130° = 65°

⇒ ∠QRP = 180° − 60° − 65° = 55°
In ΔRPS
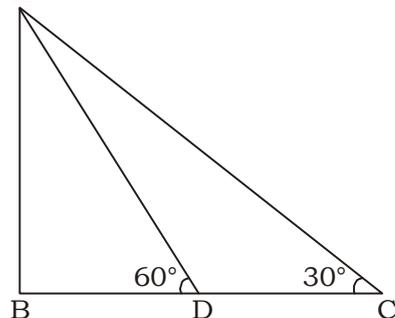∠PSR + ∠PRS + ∠RPS = 180°
90° + 55° + ∠RPS = 180°
∠RPS = 35°

133. (B)

Centroid is the point where medians intersect. Diagonals of parallelogram bisect each other.

OP = $\dfrac{1}{3}$ × 9 = 3 cm

OQ = $\dfrac{1}{3}$ × 9 = 3 cm

∴ PQ = 6 cm

134. (D)

AB = Height of tower
= h metre (let)
CD = 70 metre
BD = x metre (let)

In ΔABC,

$\tan 30° = \dfrac{AB}{BC} \Rightarrow \dfrac{1}{\sqrt{3}} = \dfrac{h}{x+70}$

$\Rightarrow \sqrt{3}h = x + 70$

$\Rightarrow x = \sqrt{3}h - 70$ ...(i)
In ΔABD,

$\tan 60° = \dfrac{h}{x}$

$\Rightarrow \sqrt{3} = \dfrac{h}{x}$

$\Rightarrow x = \dfrac{h}{\sqrt{3}}$ ...(ii)

From equations (i) and (ii),

$\sqrt{3}h - 70 = \dfrac{h}{\sqrt{3}}$

$\Rightarrow \sqrt{3}h - \dfrac{h}{\sqrt{3}} = 70$

$\Rightarrow \dfrac{3h-h}{\sqrt{3}} = 70$

$\Rightarrow 2h = 70\sqrt{3}$

$\Rightarrow h = \dfrac{70\sqrt{3}}{2} = 35\sqrt{3}$ metre

135. (C) Two angles = A and B where A > B.
∴ A + B = 135°

$= \left(\dfrac{135 \times \pi}{180}\right)$ radian

$\Rightarrow A + B = \left(\dfrac{3\pi}{4}\right)$ radian ...(i)
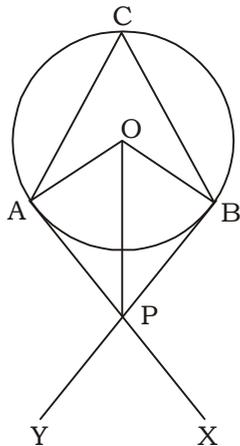
$A - B = \dfrac{\pi}{12}$ ...(ii)

On adding these equations,

$2A = \dfrac{3\pi}{4} + \dfrac{\pi}{12}$

$= \dfrac{9\pi + \pi}{12} = \dfrac{10\pi}{12} = \dfrac{5\pi}{6}$

∴ $A = \dfrac{5\pi}{12}$ radian

136. (A)

$\angle ACB = 65°$
$\angle AOB = 2 × 65° = 130°$
$\angle OAP = 90°$
$\angle AOP = 65°$
$\therefore \angle APO = 180° - 90° - 65° = 25°$

137. (B) $\cos^2\theta + \cos^4\theta = 1$
$\Rightarrow \cos^4\theta = 1 - \cos^2\theta = \sin^2\theta$
$\Rightarrow \tan^2\theta = \cos^2\theta$
$\therefore \tan^2\theta + \tan^4\theta = \cos^2\theta + \cos^4\theta = 1$

138. (B) $\dfrac{x}{y} = \dfrac{\left(\dfrac{a^2-25}{a^2-36}\right)}{\left(\dfrac{a+5}{a+b}\right)} = \dfrac{\dfrac{(a+5)(a-5)}{(a+6)(a-6)}}{\left(\dfrac{a+5}{a+6}\right)} = \dfrac{a-5}{a-6}$

139. (D) $\cos\theta \cdot \text{cosec } 23° = 1$
$\Rightarrow \text{cosec } 23° = \dfrac{1}{\cos\theta} = \sec\theta$
$\Rightarrow \text{cosec } 23° = \text{cosec }(90° - \theta)$
$\Rightarrow 23° = 90° - \theta$
$\Rightarrow \theta = 90° - 23° = 67°$

140. (D) $9x - \dfrac{9}{2x} = 18 \Rightarrow x - \dfrac{1}{2x} = 2$
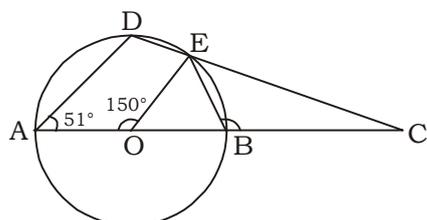Cubing both sides,
$x^3 - \dfrac{1}{8x^3} - 3x \cdot \dfrac{1}{2x}\left(x - \dfrac{1}{2x}\right) = 8$
$x^3 - \dfrac{1}{8x^3} - \dfrac{3}{2} × 2 = 8$
$\Rightarrow x^3 - \dfrac{1}{8x^3} = 8 + 3 = 11$

141. (C)

$\angle AOE = 150°$

$\angle DAO = 51°$ [Given]
$\angle EOB = 180° - 150° = 30°$
$OE = OB$

$\therefore \angle OEB = \angle OBE = \dfrac{150}{2} = 75°$

$\therefore CBE = 180° - 75° = 105°$

142. (D) Given equations are:
$3x + 4y = 5$ ...(i)
$x + 2y = 2$ ...(ii)
On solving of (i) & (ii)
We find $x = 1$, $y = 1/2$

$\therefore x + y = 1 + \dfrac{1}{2} = \dfrac{3}{2}$

143. (D) Volume of prism = Area of base × height

$\Rightarrow 366 = \dfrac{1}{2} × 4 × 28 × h$

$\Rightarrow h = \dfrac{366}{56} = 6.53$ cm

144. (A) $11x - 13 = -2x + 78$
$\Rightarrow 11x + 2x = 78 + 13$
$\Rightarrow 13x = 91$

$\Rightarrow x = \dfrac{91}{13} = 7$

145. (A) Look at the pattern:
$1001 × 1001 = 1002001$
$1001 × 1001 × 1001 = 1003003001$

146. (C) Birth-rate of Germany = 16
Birth-rate of England = 20

% Diff. $= \dfrac{20-16}{16} × 100 = 25\%$

It is 25% more than 16.

147. (A) Birth-rate of India = 33
Birth-rate of England = 20
$\therefore$ Required percentage

$= \dfrac{33}{20} × 100 = 165\%$

148. (D) Birth-rate of China = 40
Birth-rate of Germany = 16

$\therefore$ Required answer $= \dfrac{40}{16} = 2.5$

149. (B) Required ratio $= \dfrac{33}{15}$

$= \dfrac{11}{5} = 11 : 5$

150. (B) Birth-rate of England = 20
Birth-rate of New Zealand = 30
Required percentage

$$= \frac{30-20}{30} \times 100 = \frac{100}{3}\%$$

$$= 33\frac{1}{3}\%$$

151. (B) Remove 'Hardly' as 'not' and 'hardly' together make the sentence superfluous.

152. (C) 'Subject to' is a phrasal verb often used in passive form. Thus, it should be as 'are subjected to strong wind'.

153. (C) Change 'options' into 'option'. 'No other' takes singular noun.

154. (A) A sentence starting with 'No sooner' always comes in inverted form i.e,.

$$\boxed{\text{helping verb+ sub+ main verb}}$$

Here, replace (A) by 'No sooner did the bell ring'.

155. (C) Replace 'little water' by 'a little water', as little means equivalent to nothing. 'A little' means at least 'some'

175. (A) As the sentence should be in affirmative form not passive form.

176. (A) As it appears 'The film' is a company or organisation, the pronoun should be 'it'.

177. (B) 'Disparity' can only be widened not broadned.

178. (B) 'Day in and day out' is the most appropriate which means 'every day for a long period of time' whereas 'all the time' means 'during the whole of a particular period of time'.

179. (A) As the sentence is in affirmative form, the helping verb could must come after noun 'the boy'.

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Adapt	To change something in order to make it suitable for a new use or situation	अनुकूल करना
Adept	A person who is good at doing something that is quite difficult	निपुण
Auspicious	Showing signs that something is likely to be successful in the future	शुभ
Canoe	A light narrow boat which you move along in the water with a paddle	डोंगी
Demagogue	A political leader who tries to win support by using arguments based on emotion	जनोत्तेजक नेता
Dinghy	A small open boat that you sail or row	कश्ती
Divergent	Different, no longer similar	विभिन्न
Effected	Influenced or touched by an external factor	प्रभावित
Expedition	An organized journey with a particular purpose	अभियान
Flabbergasted	Extremely surprised and/or shocked	भौंचक्का
Frigate	A small fast ship in the navy that travels with other ships in order to protect them	लड़ाई का जहाज
Gauge	An instrument for measuring the amount or level of something	मापक
Gullible	Too willing to believe or accept what other people tell you and therefore easily tricked	भोला-भाला
Impulsive	acting suddenly without thinking carefully about what might happen because of what you are doing	आवेगी
Invincible	Too strong to be defeated or changed	अपराजेय
Malicious	Having or showing hatred and a desire to harm somebody or hurt their feelings	द्वेषपूर्ण
Martinet	A very strict person who demands that other people obey orders or rules completely	कठोर अनुशासक
Naive	Lacking experience of life, knowledge or good judgement and willing to believe that people always tell you the truth	भोला-भाला
Narcissism	The habit of admiring yourself too much, especially your appearance	अहंकार, आत्ममोह
Pester	To annoy somebody, especially by asking them something many times	सताना
Pugnacious	Having a strong desire to argue or fight with other people	झगड़ालू
Redemption	The act of saving or state of being saved from the power of evil	उद्धार, छुटकारा
Rival	To be as good, impressive, etc. as somebody/something else	बराबरी करना
Sagacious	Showing good judgement and understanding	दूरदर्शी
Salvation	Deliverance from sin and its consequences	मोक्ष
Tenacious	Determined	अटल, संलग्नशील
Unravelled	To start to fail or no longer stay together as a whole	उधेड़ना
Venial	Not very serious and therefore able to be forgiven	मामूली गलती
Veracious	Speaking or representing the truth	सत्यप्रिय, सत्यवादी
Verger	A church officer who takes care of the interior of the building and acts as an attendant (carries the verge) during ceremonies	पादरी के आगे डण्डा लेकर चलने वाला व्यक्ति

SSC MOCK TEST - 39 (ANSWER KEY)

1. (A)	26. (C)	51. (A)	76. (A)	101. (C)	126. (B)	151. (B)	176. (A)
2. (A)	27. (D)	52. (A)	77. (A)	102. (B)	127. (B)	152. (C)	177. (B)
3. (D)	28. (D)	53. (B)	78. (D)	103. (C)	128. (D)	153. (C)	178. (B)
4. (C)	29. (A)	54. (C)	79. (A)	104. (A)	129. (B)	154. (A)	179. (A)
5. (A)	30. (D)	55. (A)	80. (A)	105. (B)	130. (A)	155. (C)	180. (C)
6. (A)	31. (B)	56. (A)	81. (A)	106. (B)	131. (D)	156. (A)	181. (C)
7. (D)	32. (C)	57. (A)	82. (B)	107. (B)	132. (B)	157. (A)	182. (B)
8. (B)	33. (A)	58. (D)	83. (C)	108. (B)	133. (B)	158. (A)	183. (A)
9. (D)	34. (D)	59. (A)	84. (A)	109. (C)	134. (D)	159. (A)	184. (B)
10. (C)	35. (B)	60. (C)	85. (D)	110. (B)	135. (C)	160. (C)	185. (C)
11. (C)	36. (C)	61. (C)	86. (C)	111. (C)	136. (A)	161. (C)	186. (D)
12. (A)	37. (D)	62. (A)	87. (B)	112. (B)	137. (B)	162. (A)	187. (B)
13. (D)	38. (A)	63. (C)	88. (B)	113. (B)	138. (B)	163. (D)	188. (B)
14. (A)	39. (D)	64. (B)	89. (B)	114. (C)	139. (D)	164. (C)	189. (B)
15. (C)	40. (D)	65. (A)	90. (A)	115. (C)	140. (D)	165. (A)	190. (C)
16. (C)	41. (C)	66. (A)	91. (B)	116. (A)	141. (C)	166. (C)	191. (B)
17. (D)	42. (A)	67. (A)	92. (B)	117. (D)	142. (D)	167. (B)	192. (A)
18. (B)	43. (A)	68. (A)	93. (B)	118. (B)	143. (D)	168. (A)	193. (B)
19. (D)	44. (C)	69. (C)	94. (D)	119. (B)	144. (A)	169. (B)	194. (C)
20. (D)	45. (B)	70. (B)	95. (A)	120. (C)	145. (A)	170. (C)	195. (C)
21. (B)	46. (A)	71. (B)	96. (D)	121. (C)	146. (C)	171. (A)	196. (A)
22. (B)	47. (B)	72. (C)	97. (B)	122. (D)	147. (A)	172. (C)	197. (B)
23. (D)	48. (A)	73. (A)	98. (C)	123. (A)	148. (D)	173. (B)	198. (B)
24. (D)	49. (C)	74. (C)	99. (C)	124. (A)	149. (B)	174. (C)	199. (A)
25. (C)	50. (A)	75. (B)	100. (B)	125. (D)	150. (B)	175. (B)	200. (C)

Mock 28 (Correction)

106. Read the ratio '8 : 25 : 20' as '8 : 15 : 20' mentioned in hindi.

138. Given question: $a - b = 3$, $b = 4$ then $a^2 + b^2 = 5$ is

Read the question as $a - b = 3$, $ab = 4$ then $a^2 + b^2 = 5$ is

Mock 38 (Correction)

30. In hindi translation of this question, read 17वें as 7वें.

Note:- If you face any problem regarding result or marks scored, please contact 9313111777

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003