KD Campus
K D Campus Pvt. Ltd
2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

SSC MOCK TEST – 22 (SOLUTION)

1. (C) As Microphone makes sound louder similarly Microscope makes the object magnified.

2. (C) As $Z \xrightarrow{-8} R \xrightarrow{+7} Y \xrightarrow{-8} Q$

$K \xrightarrow{-8} C \xrightarrow{+7} J \xrightarrow{-8} B$

Similarly,

$P \xrightarrow{+7} W \xrightarrow{-8} O \xrightarrow{+7} V$

$\mathbf{E \xrightarrow{+7} L \xrightarrow{-8} D \xrightarrow{+7} K}$

3. (A) As **F** $\xrightarrow{-1}$ Q, **R** $\xrightarrow{-1}$ E; **I** $\xrightarrow{-1}$ H; **N** $\xrightarrow{-1}$ M; **G** $\xrightarrow{-1}$ D, **E** $\xrightarrow{-1}$ F

Similarly, W $\xrightarrow{-1}$ H, I $\xrightarrow{-1}$ V; D $\xrightarrow{-1}$ C; E $\xrightarrow{-1}$ D; L $\xrightarrow{-1}$ X, Y $\xrightarrow{-1}$ K

4. (C) As on melting, liquid is formed, similarly on freezing **solid** is formed.

5. (B) $24 \rightarrow 2 \times 4 = 8$

$32 \rightarrow 3 \times 2 = \mathbf{6}$

6. (A) $9 = (3)^2 \Rightarrow 8 = (3-1)^3$

$16 = (4)^2 \Rightarrow ? = (4-1)^3 = \mathbf{27}$

7. (A) As Tree is found in Forest similarly Grass is found in **Lawn**.

8. (A) As,

A E F J : K O P T

+4 +1 +4 (+1) +4 +1 +4

Similarly,

G K L P : Q U V Z

+4 +1 +4 (+1) +4 +1 +4

9. (C) As antonym of peace is uproar similarly antonym of creation is **destruction**.

10. (*)

11. (B) Only **Television** is audio-visual.

12. (B) In each number except **383**, the product of first and third digit is the middle one.

13. (A) All except Chicken can go into water.

14. (D) All except **Ayurveda** are the names of Vedas. Ayurveda is a branch of medicine.

15. (A) All except **Potassium** are metals used in semiconductor devices.

16. (B) B must be the odd box as three of the boxes have odd numbers of lines whereas box B contains even number of lines.

17. (D) Position of S = (19) and $19 \times 19 = 361 \neq 351$
Position of E = (5) and $5 \times 5 = 25$
Position of I = (9) and $9 \times 9 = 81$
Position of X = (24) and $24 \times 24 = 576$

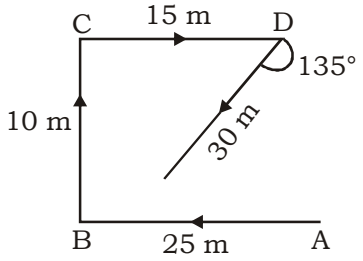
18. (C)

N P O M (+1; +2 +2) F H G E (+1; +2 +2)

Q R S P (+1; +1 +3) T V U S (+1; +2 +2)

19. (C)

20. (C)



Hence he is going in the South-West direction.

21 (B) The sum of three consecutive terms of the series gives the next term.
So, (?) = 8 + 15 + 27 = 50.

22. (A) 3 12 27 48 75 128 **147**

3×1^2 3×2^2 3×3^2 3×4^2 3×5^2 3×6^2 3×7^2

23. (D) 0.5 0.55 0.65 0.80 **1.0**

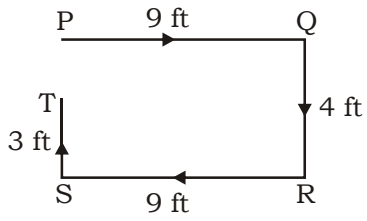
+0.05 +0.1 +0.15 +0.2

24. (C) 1 4 27 16 **125** 36 343

1^3 2^2 3^3 4^2 5^3 6^2 7^3

25. (D) Clearly, while counting the numbers associated to the thumb will be 1, 9, 17, 25, ...
Here, Numbers are in the from of (8n + 1).
Since 1994 = 249 × 8 + 2, so 1993 shall correspond to the thumb and 1994 is the **index finger** while counting.

26. (C)



Required distance = PT = 4 – 3 = 1 feet.

27. (A) 13 + 7 × **2** = 27.
54 + 45 × **2** = 144.
Then, ? + 32 × **2** = 68 ⇒ ? = 68 – 64 = 4.

28. (A) **2** × 9 + **3** × 17 = 18 + 51 = 69.
2 × 13 + **3** × 11 = 26 + 33 = 59.
Then, **2** × **?** + **3** × 13 = 49 ⇒ 2 × ? = 10
⇒ ? = 5.

29. (B) 3 × 100 + 5 × 9 = 345.
4 × 100 + 6 × 10 = 460.
So, 5 × 100 + 7 × 11 = 577

30. (A) Clearly, The number of ways to arrange 5 books = 5! = 5 × 4 × 3 × 2 × 1 = 120.
So, Total time taken = 120 minutes
= 2 hours.

31. (A) The mother warns her child with the expectation that he would stop troubling her. So, I is implicit. The general nature of children cannot be derived from the statement. So, II is not implicit.

32. (B) Since Arun and Suresh interchange places, so Arun's new position (13th from left) is the same as Suresh's earlier position (6th from right).
So, Number of children in the queue
= (12 + 1 + 5) = 18.
Now, Suresh's new position is the same as Arun's earlier position fifth from left.
∴ Suresh's position from the right
= (18 – 4) = 14th

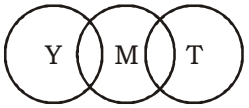
33. (A) P @ Q → P is the wife of Q ...(1)
Q $ T → Q is the brother of T ...(2)
T # U → T is the daughter of U
⇒ Q is the son of U .....(3)
U * W → U is the father of W.
From (1) and (3),
We can conclude that U is the father-in-law of P.

34. (B) The girl is the daughter of the sister of Sandeep's father. Hence, the girl is the cousin of Sandeep.

35. (B) Clearly we can observe that nine days ago, it was Thursday. Therefore today is Saturday.

36. (B)

37. (D)



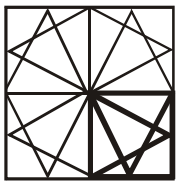
1. 5 2. 5

38. (C) Since each pole at the corner of the plot is common to its two sides.
Therefore total number of poles needed = 27 × 4 - 4 = 104.

39. (B) A leap year has 366 days. Now, if we divide 366 by 7 it gives 2 as remainder. Hence, number of odd days in 366 days is 2.

40. (A)

41. (D)



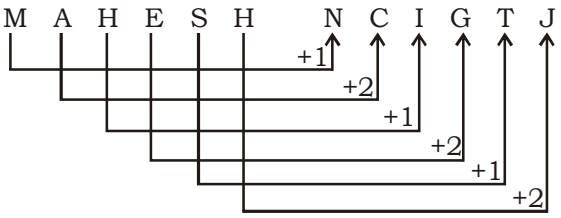
42. (C) From position I and III, considering % as the common face.
we have,

%	×	o
%	+	$

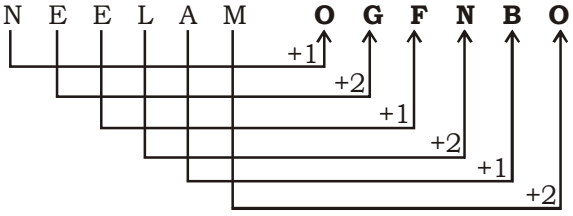
Hence according to rule sign '×' is opposite to sign '+'.

43. (D) $\underset{5}{\text{Always}} \rightarrow \underset{3}{\text{Generally}} \rightarrow \underset{2}{\text{Sometimes}} \rightarrow \underset{4}{\text{Seldom}} \rightarrow \underset{1}{\text{Never}}$

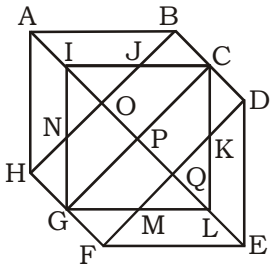
44. (C)



Similarly,



45. (D)
46. (B)
47. (B) In each row, the second figure is obtained from the first figure by adding two mutually perpendicular line segments at the centre.
The third figure is obtained from the first figure by adding four circles outside the main figure.
48. (B) The lines outside the shaded circle are not equally distributed along the circumference in figure (B).
49. (C) The figure is given below :



Simple triangles are IJO, BCJ, CDK, KQL, MLQ, GFM, GHN and NIO i.e. 8 in number.
Triangles composed of two components are ABO, AHO, NIJ, IGP, ICP, DEQ, FEQ, KLM, LCP and LGP i.e.10 in number.
Triangles composed of four components are HAB, DEF, LGI, GIC, ICL and GLC i.e. 6 in number.
Total number of triangles in the figure
= 8 + 10 + 6 = 24
50. (C)
52. (C) TRIPS stands for Trade-Related aspects of Intellectual Property Rights. The TRIPS Agreement is the most comprehensive multilateral agreement on intellectual property.
53. (C) The cornea represents the strongest part of the refracting power of the eye which provides about 80% of the power of the system. The index of refraction of the cornea is about 1.376. Rays pass from the cornea into the water fluid known as the aqueous humour which has an index of refraction of about 1.336. The lens provides perhaps 20% of the refracting power of the eye with a refractive index of 1.386 – 1.406 the refractive Index of Vitreous Humour is 1.33.
55. (A) RAM is not a secondary storage device. Storage consists of storage devices and their media not directly accessible by the Central Processing Unit (CPU). Secondary storage is all data storage that is not currently in a computer's primary storage or memory.
56. (A) Duncan Passage is a strait in the Indian Ocean. It is about 48 km 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. Several small islands and islets lie along the passage.
57. (A) The central government expenditure itself is divided into two parts i.e. planned expenditure and non-planned expenditure. Non Planned Expenditure is money that's spent on sustaining the country like defence, postal deficit, subsidies etc. and Plan Expenditure is the money that is spent on improving the country (the money spent on dams, roads etc.). Interest Payments and Debt Servicing comprise more than 30 percent of this expenditure.
58. (D) Lithium has the highest specific heat capacity of any solid element. Lithium metal is often used in coolants for heat transfer applications. It belongs to the alkali metal group of chemical elements. Under standard conditions it is the lightest metal and the least dense solid element. Like all alkali metals, lithium is highly reactive and flammable. For his reason, it is typically stored in mineral oil.
60. (C) Bragg Spectrometer is an instrument used to analyze crystal structure by using X-rays. Here a beam of collimated X-rays strikes the crystal and a detector measures the angles and intensities of the reflected beam.
64. (B) After joining the Congress Party and taking part in political agitation in the Punjab, Lala Lajpt Rai was deported to Mandalay, Burma (Myanmar) without trial in May 1907. In November, however he was allowed to return when the viceroy Lord Minto decided that there was insufficient evidence to hold him for subversion.
66. (C) Article 15 of the constitution states that no person shall be discriminated on the basis of caste, colour, language etc. Every person shall have equal access to public places like public parks, museums, wells, bathing ghats and temples etc. However, the state may make any special provisions for women and children. Special provisions may be made for the advancements of any socially or educationally backward class or scheduled castes or scheduled tribes.

67. (C) Seasonal employment refers to a situation where a number of persons are not able to find jobs during some months of the year. Example: Agriculture is a seasonal activity. There is an increased demand for labour at the time for sowing, harvesting, weeding and threshing. In between there is little or no demand for labour. Besides this disguised unemployment is also seen in agriculture in India.

68. (A) Article 222 empowers the President to transfer judges from one High Court to another. Clause (2) of this article goes on to provide that when a judge is transferred he shall be entitled to receive a compensatory allowance in addition to his salary. It is felt that there is no real justification for granting such an allowance and it is accordingly proposed to omit clause.

69. (A) Robert Edwin Peary was an American explorer who claimed to have led the first expedition, on April 6,1909, to reach the geographic North Pole. Peary's claim was widely credited for most of the 20th century, though it was criticized even in its own days.

73. (A) Somdev Kishore Dev Varman, is a professional Indian tennis player. Three of Dev Varman's college conquests, John Isner, Kevin Anderson, and Jesse Levine have successful pro careers. He hit the headlines for being the only collegiate player to have made three consecutive finals at the NCAA and winning back-to-back finals in his junior and senior years.

74. (A) Microsoft Outlook is a personal information manager from Microsoft, available as a part of the Microsoft Office suite. Although often used mainly as an email application. It also includes a calendar, task manager, contact manager, note taking, a journal and web browsing.

75. (D) Vitamin B_6 is a member of the B complex family of vitamins. It is known as pyridoxine. Its deficiency may lead to microcytic anaemia, depression, dermatitis, high blood pressure (hypertension), water retention, and elevated levels of homo cysteine. Vitamin B6 is found in a wide range of foods, including meat, poultry, legumes, bananas and foods that are fortified with a supplemental form. Adults need 1.3 to 1.7 milligrams (mg) daily to meet their requirements.

77. (A) The Planck's constant has dimensions of physical action. These are the same as those of angular momentum, i.e., energy multiplied by time, or momentum multiplied by distance. In SI units, the Planck constant is expressed in joule seconds (J.s) or (N.m.s).

79. (D) The Battle of Rajasthan is a battle (or series of battles) where the Hindu alliance defeated the Arab invaders in 738 AD and removed the Arab invaders from the area east of the Indus River and protected the whole of India. The main Indian kings who contributed to the victory over the Arabs were the north Indian ruler Nagabhata of the Partihara Dynasty and the south Indian Emperor Vikramaditya-II of the Chalukya Dynasty in the 8th century.

81. (B) Ratna is a resistant variety of rice. This paddy variety takes about 130-135 days to grow. The main states growing this variety are Bihar, Madhya Pradesh, Assam, West Bengal, Orissa, Terai region of UP, Punjab, Haryana and Tamil Nadu.

82. (B) The consumption function is a mathematical formula laid out by famed economist John Maynard Keynes. The formula was designed to show the relationship between real disposable income and consumer spending. The latter variable is considered the most important determinant of short-term demand in an economy.

83. (C) Colour-blindness is the inability to distinguish the differences between certain colours. This condition results from the absence of colour-sensitive pigment in the cells of the retina, the nerve layer at the back of the eye. A person with colour-blindness has trouble seeing red, green, blue or mixtures of these colors. The most common type is red-green colour-blindness, where red and green are seen as the same colour.

85. (D) Curzon introduced some reforms in agriculture. He passed the Punjab Land alienation Act of 1902. Under this act Curzon declared that the land of agriculture will not be transferred to non-agriculturist. In this way he protected the farmers from money lender class.

87. (A) Proportional representation (PR) is a concept in voting systems used to elect an assembly or council. PR means that the number of seats won by a party or group of candidates is proportionate to the number of votes received. It is a voting system whereby successful parties gain seats or majority in a country's legislature and thus are eligible for government formation.

88. (A) Jim Yong Kim, a Korean-American physician and anthropologist has been the 12th President of the World Bank since July 1, 2012. He was President of Dartmouth College from 2009 to 2012.

91. (D) The freezing point of water is the temperature at which water changes from liquid to solid. Under normal conditions, ordinary water freezes at 0°C or 32°F. The temperature may be lower if super cooling occurs or if there are impurities present in the water which could cause freezing point depression to occur.

92. (C) Sabarimala is a famous pilgrim centre situated on a hilltop amid sylvan surroundings in Kerala. About 50 million devotees visit this shrine (the abode of Lord Dharmasastha) during November-January every year.

93. (C) In view of the large number of figurines found in the Indus valley, some scholars believe that the Harappan people worshipped a Mother goddess symbolizing fertility (a common practice among rural Hindus even today).

94. (C) The Constituent Assembly of India was elected to write the Constitution of India. Some of its prominent members were Pandit Jawaharlal Nehru, Maulana Abul Kalam Azad, Sardar Vallabhbhai Patel, Acharya J.B. Kriplani, Dr. Rajendra Prasad, Smt. Sarojini Naidu, Shri Hari-Krishna Mahtab, Pandit Govind Ballabh Pant, Dr. B.R. Ambedkar, Shri Sarat Chandra Bose, Shri C. Rajagopalachari and Shri M. Asaf Ali. Mahatma Gandhi was not a member of constituent assembly.

96. (B) Sirimavo Bandaranaike was a Sri Lankan Politician and the modern world's first female head of government. She served as the Prime Minister of Ceylon and Sri Lanka three times, 1960-65, 1970-77 and 1994-2000 and was a long-time leader of the Sri Lanka Freedom Party.

97. (C) The ozone layer is a layer in Earth's atmosphere containing relatively high concentrations of ozone (O_3). The layer absorbs 97-99% of the Sun's medium-frequency ultraviolet light (from about 200 nm to 315 nm wavelength) which potentially damages exposed life forms on Earth.

101. (B) 5% of the girls = 4% of the boys

$$\frac{5}{100} \times G = \frac{4}{100} \times B$$

$$\frac{G}{B} = \frac{4}{5}$$

No. of Girls in KD campus = $\frac{4}{9} \times 18000$

= 8000.

102. (C)

	Kamal	:	Robin
	54	:	81
Income →	2	:	3

Now Total work = 2 × 12 = 24 units

Required time to finish the work by Kamal and Robin together = $\frac{24}{5}$ = 4.8 days.

103. (D) 7 jumps of Shaktiman ≡ 5 jumps of Kilvish

$\therefore$ 8 jumps of Shaktiman ≡ $\frac{5}{7} \times 8$

$= \frac{40}{7}$ jumps of Kilvish

$\therefore$ Required ratio = $\frac{40}{7} : 6$

= 40 : 42 = 20 : 21

104. (A) Discount given by Preeti

$= 28000 \times \frac{10}{100}$ = ₹ 2800

Discount given by Monika

$= 20{,}000 \times \frac{12}{100} + \frac{8000 \times 8}{100}$

⇒ ₹ 3040

Required difference

= ₹ 3040 – 2800

= ₹ 240

105. (D)

5	A	7
3	3	5
8	B	2

⇒ A → 1, 2, 3, 4, 5 &

B → 5, 6, 7, 8, 9

8B2 is exactly divisible by 3.

$\therefore$ 8 + B + 2 = multiple of 3

$\therefore$ B = 5 or 8 ⇒ A = 1 or 4

106. (B)

I + II + III ⟶ 12 (5)
II + III + IV ⟶ 15 (4)
I + IV ⟶ 20 (3)

Total capacity of dam = 60

LCM (12, 15, 20)

2(I + II + III + IV) Required time = $\frac{60}{12}$ = 5 min

(I + II + III + IV) Required time

= 5 × 2 = 10 min.

107. (B) No. of Matches lost = 3

Total Matches = 24

Percentage of matches lost = $\frac{3}{24} \times 100$

$= 12\frac{1}{2}\%$

108. (B) Pankaj → 20 days
Let the total work = 20 units

Then 25% = $\frac{1}{4}$

Remaining work = $20 \times \frac{3}{4}$ = 15 units

15 units done by Neha in 10 days
20 units (Total work) done by Neha

$= \frac{10}{15} \times 20 = \frac{40}{3}$ days

Pankaj → 20 days — 2
Neha → $\frac{40}{3}$ days — 3
40 Total work

Time required for Pankaj and Neha to complete the work = $\frac{40}{5}$

= 8 days

109. (D) Let the distance of total journey = LCM of (8, 6) = 24 units

$\therefore \frac{3}{8}$ of the journey = $\frac{3}{8} \times 24 = 9$ units

and $\frac{5}{6}$ of the journey = $\frac{5}{6} \times 24 = 20$ units

i.e. it covered 20 – 9 = 11 units of distance in 4.30 p.m. – 11 a.m.

$= 5\frac{1}{2}$ hours = $\frac{11}{2}$ hours

$\therefore$ Speed of person = $\frac{11}{11/2}$ = 2 km/hr

$\therefore \frac{3}{8}$ of the journey will be covered in

$= \frac{9}{2} = 4\frac{1}{2}$ hours

Starting time = 11 a.m – $4\frac{1}{2}$ hours

= 6.30 a.m

110. (D) Expression

$= \sqrt{156.25} + \sqrt{0.0081} - \sqrt{0.0361}$

= 12.5 + 0.09 + 0.19 = 12.78

111. (A) $A = P\left(1+\frac{R}{100}\right)^T$

$\therefore 3840 = P\left(1+\frac{R}{100}\right)^4$ ...(i)

$3936 = P\left(1+\frac{R}{100}\right)^5$ ...(ii)

Dividing equation (ii) by equation (i),

$\frac{3936}{3840} = 1 + \frac{R}{100}$

$\Rightarrow \frac{R}{100} = \frac{3936}{3840} - 1$

$= \frac{3936-3840}{3840} = \frac{96}{3840}$

$\Rightarrow R = \frac{96}{3840} \times 100 = 2.5\%$

112. (B) Let the initial value of machine = x
According to the question,

$x \times \frac{90}{100} \times \frac{95}{100} \times \frac{90}{100} \times \frac{95}{100} = 146205$

x = ₹ 2,00,000
Initial value of machine = ₹ 2,00,000

113. (A) Speed of man = 8 km/h
Speed of stream = x km/h
Then,

$x + 8 = \frac{44}{4} = 11$

x = 3 km/h
speed upstream = 8 – 3 = 5 km/h

Required time = $\frac{25}{5}$ = 5 hours.

114. (C) If the number of students in section A be x and that in section B be y, then

$74 = \frac{77.5 \times x + y \times 70}{x+y}$

$\Rightarrow 74x + 74y = 77.5x + 70y$
$\Rightarrow 77.5x - 74x = 74y - 70y$
$\Rightarrow 3.5x = 4y$

$\frac{x}{y} = \frac{40}{35}$

$\frac{x}{y} = \frac{8}{7}$

115. (C) X + Y = ₹ (2 × 5050) = ₹ 10100
Y + Z = ₹ (2 × 6250) = ₹ 12500
$z + x$ = ₹ (2 × 5200) = ₹ 10400
Adding all three,
2 (X + Y + Z)
= ₹ (10100 + 12500 + 10400)
= ₹ 33000
$\Rightarrow$ X + Y + Z = ₹ 16500
$\therefore$ X = (X + Y + Z) – (Y + Z)
= ₹ (16500 – 12500)
= ₹ 4000

116. (B) Average speed = $\frac{2 \times 40 \times 60}{(60 + 40)}$ = 48 km/hr

Total distance = 48 × 10 = 480 km

117. (B)

Initial	Present
20	19
10	11
25	28
5,000	5852
↓×20	↓×20
1,00,000	1,17,040

Hence the profit = 1,17,040 – 1,00,000
= ₹ 17040

118. (B)

CP	:	MP
(100 – 25)	:	(100 + 12.5)
75	:	112.5
2	:	3
↓×300		↓×300
600	:	900

Cost price of the article = ₹ 600

119. (B) ∠ACD = ∠ADC = x
∵ ∠CAD = (180° – 2x)

∠ABC = ∠BAC = $\frac{X}{2}$

(∴ ∠ABC + ∠BAC = ∠ACD = x)
∴ ∠BAC + ∠CAD + 81° = 180°

∴ $\frac{X}{2}$ + (180° – 2x) + 81° = 180°

∴ $\frac{3}{2}$X = 81°

⇒ X = 54°

120. (D) Ratio of capitals of A, B and C for 1 year
= (40500 × 12 + 4500 × 6) : (45000 × 12) : (60000 × 6 + 45000 × 6)
= 513 : 540 : 630
= 57 : 60 : 70
Sum of the ratios = 57 + 60 + 70 = 187

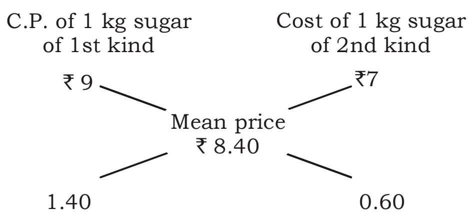
Required difference = $\frac{70 - 57}{187}$ × 56100

= $\frac{13}{187}$ × 56100 = ₹ 3900

121. (D) S.P. of 1 kg of mixture = ₹ 9.24,
Gain = 10%

∴ C.P. of 1 kg of mixture = ₹$\left(\frac{100}{110} \times 9.24\right)$

= 8.40
By the rule of alligation, we have :



∴ Ratio of quantities of 1st and 2nd kind
= 14 : 6 = 7 : 3.
Let x kg of sugar of 1st kind be mixed with 27 kg of 2nd kind.

Then, 7 : 3 = x : 27 or x = $\left(\frac{7 \times 27}{3}\right)$ = 63 kg.

122. (D) CP of the car = ₹ 3,00,000

Profit = 3,00,000 × $\frac{10}{100}$ = 30,000

CP of the bike = ₹ 1,00,000

Loss = 1,00,000 × $\frac{20}{100}$ = 20,000

Net profit = 30,000 – 20,000 = ₹ 10,000

Percentage profit = $\frac{10000 \times 100}{400000} = \frac{10}{4}$ = 2.5%

123. (C) Let the present ages of A and B be 5x and 3x years respectively.

Then, $\frac{5x - 4}{3x + 4} = \frac{1}{1}$

⇔ 5x – 4 = 3x + 4
⇔ 2x = 8
⇔ x = 4
∴ Required ratio = (5x + 4) : (3x – 4)
= 24 : 8 = 3 : 1

124. (C) In ΔABM and ΔBEC
∠BAM = ∠BCE
∠BMA = ∠BEC (∵ AM||EC)
∴ ΔABM ~ ΔBEC

∴ $\frac{AB}{BC} = \frac{AM}{EC} \Rightarrow \frac{5}{10} = \frac{AM}{18}$ ⇒ AM = 9 cm

∵ AM||DN
∴ ΔAMC ~ ΔDNC

∴ $\frac{DN}{AM} = \frac{DC}{AC} \Rightarrow \frac{15}{9} \frac{DC}{15}$

⇒ DC = $\frac{15 \times 15}{9}$ = 25 cm

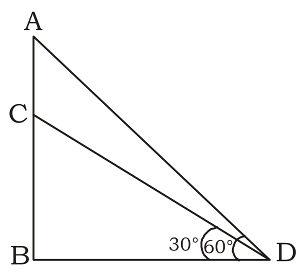
125. (C) Required distance = LCM of 63, 70 and 77 cm.
= 6930 cm.

Illustration :

7	63, 70, 77
	9, 10, 11

∴ LCM = 7 × 9 × 10 × 11 = 6930

126. (D)



A and C ⇒ position of planes

BC = 3125 m
AC = x metre
In ΔABD,

$\tan 60° = \frac{AB}{BD}$

$\Rightarrow \sqrt{3} = \frac{3125 + x}{BD}$

$\Rightarrow BD = \frac{3125 + x}{\sqrt{3}}$

In ΔBCD,

$\tan 30° = \frac{BC}{BD}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{3125}{\frac{3125 + x}{\sqrt{3}}}$

$\Rightarrow 3(3125) = 3125 + x$
$\Rightarrow x = 9375 - 3125$
$x = 6250$ metre

127. (D) Let the no. of sides be $2n$ and $3n$. And let their interior angles be $6y°$ and $7y°$.
$\therefore$ exterior angles are $(180° - 6y°)$ and $(180 - 7y)°$

$\therefore \frac{360}{2n} = 180° - 6y$ _____(i)

$\frac{360}{3n} = 180° - 7y$ _____(ii)

Solving (i) and (ii), we get $n = 3$
$\therefore$ no. of sides of the polygons are 6, 9.

128. (B) $(64)^{x+1} = \frac{64}{4^x}$

$\Rightarrow (4^3)^{x+1} \times 4^x = 64$
$\Rightarrow 4^{3x+3+x} = 4^3$
$\Rightarrow 4^{4x+3} = 4^3$
$\Rightarrow 4x + 3 = 3$
$\Rightarrow x = 0$

129. (A) $= 1 - \frac{\sin^2 A}{1 + \cos A} + \left[\frac{1 + \cos A}{\sin A} - \frac{\sin A}{1 - \cos A}\right]$

$= 1 - (1 - \cos A) + \left[\frac{1 - \cos^2 A - \sin^2 A}{\sin A(1 - \cos A)}\right]$

$= \cos A + \left[\frac{1 - 1}{\sin A(1 - \cos A)}\right]$

$= \cos A$

130. (A) $(x^{b+c})^{b-c} \cdot (x^{c+a})^{c-a} \cdot (x^{a+b})^{a-b}$

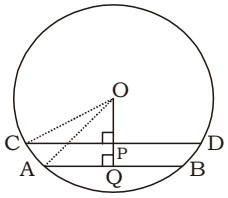
$= x^{b^2-c^2} \cdot x^{c^2-a^2} \cdot x^{a^2-b^2}$

$= x^{b^2-c^2+c^2-a^2+a^2-b^2} = x^0 = 1$

131. (B) In ΔOPC
$OC^2 = OP^2 + CP^2$

$\Rightarrow 5^2 = OP^2 + \left(\frac{8}{2}\right)^2$

$\Rightarrow OP^2 = 5^2 - 4^2$
$\Rightarrow OP^2 = 9$
$\Rightarrow OP = 3$ cm
In ΔOQA



$OA^2 = OQ^2 + AQ^2$

$\Rightarrow 5^2 = OQ^2 + \left(\frac{6}{2}\right)^2$

$\Rightarrow OQ^2 = 5^2 - 3^2$
$\Rightarrow OQ = 4$ cm
$\therefore$ distance between chords AB and CD
$PQ = OQ - OP = 4 - 3 = 1$ cm

132. (A) $x + \frac{1}{x} = 5$

On squaring both sides,

$x^2 + \frac{1}{x^2} + 2 = 25$

$\Rightarrow x^2 + \frac{1}{x^2} = 25 - 2 = 23$ ...(i)

Expression

$= \frac{x^4 + 3x^3 + 5x^2 + 3x + 1}{x^4 + 1}$

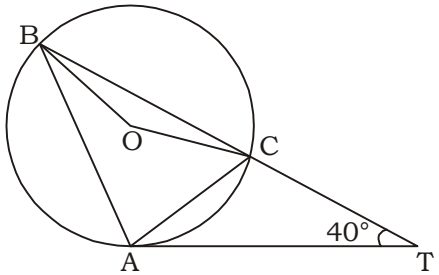
$= \frac{x^4 + 1 + 3x^3 + 3x + 5x^2}{x^4 + 1}$

$= \frac{x^2\left(x^2 + \frac{1}{x^2}\right) + 3x^2\left(x + \frac{1}{x}\right) + 5x^2}{x^2\left(x^2 + \frac{1}{x^2}\right)}$

$= \frac{\left(x^2 + \frac{1}{x^2}\right) + 3\left(x + \frac{1}{x}\right) + 5}{x^2 + \frac{1}{x^2}}$

$= \frac{23 + 3 \times 5 + 5}{23} = \frac{43}{23}$

133. (D)



$\angle CAT = 44°$
$\angle BTA = 40°$

$\angle ACT = 180° - 44° - 40° = 96°$
$\angle CAT = \angle CBA = 44°$
(By Alternate segment Theorem)
$\angle BCA = 180° - 96° = 84$
$\therefore$ BAC = $180° - 84° - 44° = 52°$
$\therefore$ Angle subtended by BC at centre
$= 2 \times 52° = 104°$

134. (B) S.I. = 2641.20 – 1860 = ₹ 781.2

$$\text{Time} = \frac{S.I. \times 100}{\text{Principal} \times \text{Rate}}$$

$$= \frac{781.2 \times 100}{1860 \times 12} = 3.5 \text{ years}$$

135. (A) $(a \pm b)^2 = a^2 \pm 2ab + b^2$

If $a = \frac{x}{y}$; $b = \frac{y}{2}$

then,

$$\pm 2ab = \pm 2 \times \frac{x}{y} \times \frac{y}{2} = \pm x$$

$\therefore tx = \pm x$
$\Rightarrow t = \pm 1$

136. (C) $x = \sqrt[3]{a + \sqrt{a^2 + b^3}} + \sqrt[3]{a - \sqrt{a^2 + b^3}}$

Cubing both sides,

$$x^3 = \left(\sqrt[3]{a + \sqrt{a^2 + b^3}}\right)^3 + \left(\sqrt[3]{a - \sqrt{a^2 + b^3}}\right)^3$$

$$+ 3\left(\sqrt[3]{a + \sqrt{a^2 + b^3}}\right) 3\left(\sqrt[3]{a - \sqrt{a^2 + b^3}}\right)$$

$$\left(\sqrt[3]{a + \sqrt{a^2 + b^3}} + \sqrt[3]{a - \sqrt{a^2 + b^3}}\right)$$

$$= a + \sqrt{a^2 + b^3} + a - \sqrt{a^2 + b^3} +$$

$$+3\left(\left(a + \sqrt{a^2 + b^3}\right) \times \left(a - \sqrt{a^2 + b^3}\right)\right)^{\frac{1}{3}} x$$

$$= 2a + 3\left(a^2 - a^2 - b^3\right)^{\frac{1}{3}} x$$

$= 2a + (-3bx)$
$\therefore x^3 + 3bx = 2a$

137. (D) $\frac{a\sin\theta + b\cos\theta}{a\sin\theta - b\cos\theta} = \frac{a\tan\theta + b}{a\tan\theta - b}$

[Dividing numerator and denominator by cos θ]

$$\frac{a \times \frac{a}{b} + b}{a \times \frac{a}{b} - b} = \frac{\left(\frac{a^2 + b^2}{b}\right)}{\frac{\left(a^2 - b^2\right)}{b}} = \frac{a^2 + b^2}{a^2 - b^2}$$

138. (C) $A + B = 90° \Rightarrow A = 90° - B$
$\Rightarrow \sin A = \sin(90° - B) = \cos B$
Similarly,
$\Rightarrow \cos A = \sin B$, $\tan A = \cot B$
$\therefore \sin A \cdot \cos B + \cos A \cdot \sin B - \tan A \cdot \tan B + \sec^2 A - \cot^2 B$
$= \cos^2 B + \sin^2 B - \cot B \cdot \tan B + \sec^2 A - \tan^2 A$
$= 1 - 1 + 1 = 1$
[$\because \tan B \cdot \cot B = 1$, $\sec^2 A - \tan^2 A = 1$]

139. (D) $\sin^{113}\theta \cdot \cos^{113}\theta$

$$= \frac{1}{2^{113}} (2\sin\theta \cdot \cos\theta)^{113}$$

$$= \left(\frac{1}{2}\right)^{113} (\sin 2\theta)^{113} \le \left(\frac{1}{2}\right)^{113}$$

($\because -1 \le \sin 2\theta \le 1$)
Hence, the greatest value of

$$\sin^{113}\theta \cdot \cos^{113}\theta = \left(\frac{1}{2}\right)^{113}$$

140. (D) $\frac{\sin 12°}{\sin 48°} - \frac{\cos 78°}{\cos 42°}$

$$= \frac{\sin 12°}{\sin 48°} - \frac{\cos(90° - 12°)}{\cos(90° - 48°)}$$

$$= \frac{\sin 12°}{\sin 48°} - \frac{\sin 12°}{\sin 48°} = 0$$

141. (B) Distance covered by wheel in one revolution
= Circumference of wheel

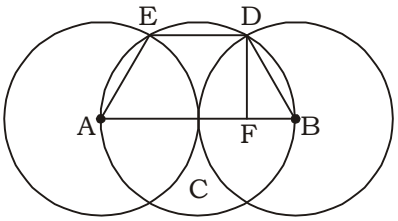
$$\therefore \pi \times \text{diameter} = \frac{440}{1000}$$

$$\Rightarrow \frac{22}{7} \times \text{diameter} = \frac{440}{1000}$$

$$\Rightarrow \text{Diameter} = \frac{440}{1000} \times \frac{7}{22}$$

$= 0.14$ m

142. (B)



ABDE will be trapezium
AB = 4 units

$$DE = \frac{1}{2} AB = 2 \text{ units}$$

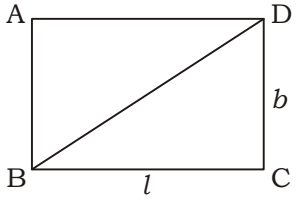
FB = 1 unit, BD = 2 units.

$\therefore DF = \sqrt{2^2 - 1^2} = \sqrt{3}$ units
$\therefore$ Area of ABDE

$$= \frac{1}{2}(AB + DE) \times DF$$

$$= \frac{1}{2}(4 + 2) \times \sqrt{3}$$

$$= 3\sqrt{3} \text{ sq. units}$$

143. (D) 

BD = length of diagonal
= speed × time

$= \frac{52}{60} \times 15 = 13$ metre

BD = $\sqrt{l^2 + b^2}$

$\Rightarrow l^2 + b^2 = 169$ ...(i)

Again,

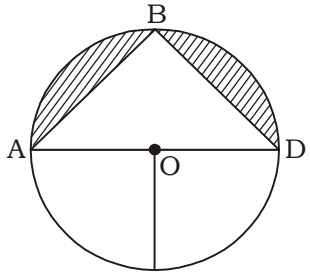
$(l + b) = \frac{68}{60} \times 15 = 17$ ...(ii)

$\therefore (l + b)^2 = l^2 + b^2 + 2lb$

$\Rightarrow 17^2 = 169 + 2lb$

$\Rightarrow 2lb = 289 - 169 = 120$

$\Rightarrow lb = \frac{120}{2} = 60$ m^2

144. (C) 

Let Radius of circle = a units

$\therefore$ Area of semi circle

$= \frac{\pi a^2}{2}$ sq. units

$\therefore$ Area of triangle ABD = $\frac{1}{2} \times a \times 2a = a^2$

$\therefore$ Area of shaded region

$= \frac{\pi a^2}{2} - a^2 = a^2\left(\frac{\pi}{2} - 1\right)$ sq. units

145. (C) Since, point of intersection of medians is "centroid".

$\therefore$ co-ordinates of centroid

$= \left(\frac{0+5+7}{3}, \frac{6+3+3}{3}\right)$

$= \left(\frac{12}{3}, \frac{12}{3.}\right) = (4, 4)$

146. (A) Quantity of Guava at shop A

$= 1200 \times \frac{10}{100} = 120$ kg

Quantity of Guava at shop B

$= 1000 \times \frac{16}{100} = 160$ kg

So, required difference = 160 – 120 = 40 kg

147. (B) Cost of Mango at shop A

$= 30 \times 1200 \times \frac{24}{100} =$ ₹ 8640

Cost of apple = $40 \times 1200 \times \frac{16}{100} =$ ₹ 7680

Cost of orange = $20 \times 1200 \times \frac{20}{100} =$ ₹ 4800

So, required ratio = 8640 : 7680 : 4800
= 9 : 8 : 5

148. (C) Quantity of Mango at shop B

$= 1000 \times \frac{24}{100} = 240$ kg

Quantity of Mango at shop B

$= 1200 \times \frac{24}{100} = 288$ kg

So, required% = $288 \times \frac{100}{240} = 120\%$ of the quantity of Mango at shop A

149. (D) Cost of total fruits at shop A = Cost of Mango + Cost of Apple + Cost of Guava + Cost of Orange + Cost of other fruits

$(1200 \times \frac{24}{100} \times 30 + 1200 \times \frac{16}{100} \times 40 + 1200 \times \frac{10}{100} \times 18 + 1200 \times \frac{20}{100} \times 20 + 1200 \times \frac{30}{100} \times 15)$

= 8640 + 7680 + 2160 + 4800 + 5400
= ₹ 28680

Cost of total fruits at shop B

$= (1000 \times \frac{24}{100} \times 30 + 1000 \times \frac{14}{100} \times 40 + 1000 \times \frac{16}{100} \times 18 + 1000 \times \frac{20}{100} \times 20 + 1000 \times \frac{26}{100} \times 15)$

= 7200 + 5600 + 2880 + 4000 + 3900
= ₹ 23580

So, required difference
= 28680 – 23580 = ₹ 5100

150. (D) Quantity of Orange at shop A

$= 1200 \times \frac{20}{100} = 240$ kg

Quantity of Apple at shop B

$= 1000 \times \frac{14}{100} = 140$ kg

So, required% = $240 \times \frac{100}{140\%} = 171.42\%$ more than the quantity of Apple at shop B.

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Animate	Having life, alive or living	सजीव
Awry	Not straight or neat	तिरछा, विकृत
Axiomatic	Self-evident	स्वत: सिद्ध
Bellicose	Having or showing a tendency to argue or fight	झगड़ालू, कलहप्रिय
Belligerent	Angry and aggressive; feeling or showing readiness to fight	लड़ाकू, झगड़ालू
Blue print	A detailed plan of how to do something	रूपरेखा, योजना
Captive	Kept as a prisoner or in a confined space; unable to escape	बंदी
Centripetal	Acting in a direction toward a center	केन्द्राभिमुखी
Defalcation	The fraudulent appropriation of funds or property entrusted to your care but actually owned by someone else	गबन
Diocese	The area that is controlled by a bishop in a Christian church	पादरी का देश
Disintegration	The process of becoming much less strong or united and being gradually destroyed	विघटन
Dwindling	Gradually becoming smaller	घटना, कम होना
Eulogize	To praise somebody/something very highly	प्रशंसा करना
Filthy	Dirty	गंदा
Flippant	Lacking proper respect or seriousness	अविनीत, गम्भीर न होना
Flout	To treat with contemptuous disregard/disobey	उल्लंघन करना, निरादर करना
Frail	Having less than a normal amount of strength or force; very weak	दुर्बल, कमजोर
Impose	To force someone to accept something	थोप देना
Inoculation	Taking a vaccine as a precaution against contracting a disease	टीका
Invigorate	To cause (something) to become more active and lively	जान डालना, स्फूर्ति से भर देना
Languish	To continue for a long time without activity or progress in an unpleasant or unwanted situation	झेलना
Menial	Not skilled or important, and often boring or badly paid	तुच्छ
Salvation	The state of being saved from sin or evil	मोक्ष, निवारण
Servile	Very obedient and trying too hard to please someone	चाटुकार, चापलूस
Synoptic	Presenting a summary or general view of a whole	संक्षिप्त
Taciturn	Tending to be quiet; not speaking frequently	अल्पभाषी, मौन
Unequivocal	Expressing your opinion or intention very clearly and firmly	स्पष्ट, सुबोध

SSC MOCK TEST - 22 (ANSWER KEY)

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

151. (D)

152. (D) Since 'between' is used for two persons and 'among' is used for more than two, replace 'between' by 'among'.

153. (D) As the sentence and question tag must be in the same tense, replace 'isn't she ?' by 'did't she ?'

154. (D) Replace 'or' by 'as'. 'As.... as' is a pair of correlative.

155. (B) Add 'other' after 'any' since, comparison is being made between 'Shanghai' and 'any other city of the world', thus excluding 'Shanghai' from the rest, it being compared to.

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