1997, GROUND FLOOR OPPOSITE MUKHERJEE NAGAR POLICE STATION, OUTRAM LINES, GTB NAGAR, NEW DELHI – 09

SSC MOCK TEST - 391 (SOLUTION)

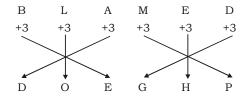
- 1. (2) Hepatitis is caused by virus, while tuberculosis is caused by Bacteria.
- 2. (2) As, $(432 \div 3) + 3 = 147$ Similarly, $(963 \div 3) + 3 = 324$
- 3. (1) Asthma affects the lungs and Arthritis affects bones, while Conjunctivitis affects the eyes.
- 4. (3) Except 1895, others are divisible by 13.
- 5. (1) Except Ornithology, others are studies related to the body parts. Ornithology is related to the branch of zoology.
- 6. (3) $625 + 12^2 = 769$ $769 + 13^2 = 938$ $938 + 14^2 = 1134$ $1134 + 15^2 = 1369$
- 7. (4) +2 +2 +2 +2 +2

 B A D F E H J I L N M P

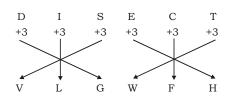
 -1 +2 -1 +2 -1 +2 -1
- 8. (3) As, $16 \times 83 = 1328 \Rightarrow 1 + 3 + 2 + 8 = 14$ Similarly, $16 \times 92 = 1472 \Rightarrow 1 + 4 + 7 + 2 = 14$
- 9. (3) $l\underline{\mathbf{m}} j q \mathbf{r} / \mathbf{r} q j \mathbf{m} l / lm \mathbf{j} q r$
- 10. (1) M R P N N S Q

So, N is immediate left to P.

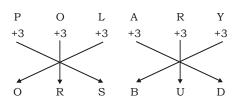
11. (2) As,



And,



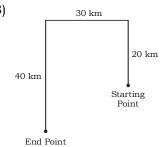
Similarly,





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12. (3)



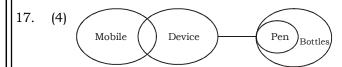
Kavita is in South-West.

13. (3) 2. Sketching \rightarrow 3. Colouring \rightarrow 4. Framing \rightarrow 1. Displaying

14. (1) As,
$$5 \times 2 - 3 = 7$$

And $27 \times 2 - 23 = 31$
Similarly, $135 \times 2 - 69 = 201$

15. (3) 16. (3)



I. False II. Fa Hence, No conclusion follows.

II. False III. False

18. (2) Son age five years ago = 18 years Son present age = 18 + 5 = 23 years

> Father age at the time of birth of his son = son present age = 23 years Present age of father = 23 + 23 = 46 years

19. (4) 20. (3)

21. (1)
$$105 \div 5 \times 18 + 35 - 28 = 31$$

After changing 5 and 35,

$$105 \div 35 \times 18 + 5 - 28 = 31$$

$$3 \times 18 + 5 - 28 = 31$$

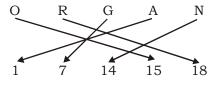
$$59 - 28 = 31$$

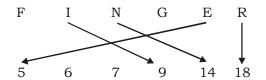
$$31 = 31$$

22. (2)

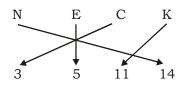
23. (2) As,

And,





Similarly,



24. (4) 25. (3)



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- 26. (4) Chinese company Yangtze power has developed world's largest electric cruise ship.
 - (1) This cruise ship has a 7,500-kilowatt-hour massive battery.
 - (2) This battery has been manufactured by Contemporary Amperex Technology.
 - (3) This ship has been built for the purpose of taking passengers for sightseeing on the Yangtze River.
- 27. (4) The International Day for the Elimination of Racial Discrimination has been observed annually on 21 March across the globe.
 - (1) The theme of this year's observance of the International Day for the Elimination of Racial Discrimination was 'Voice for action against racism'.
 - (2) This day also encouraged people globally to strengthen their voices against racism and a safe environment for all those speaking out against racism.
- 28. (1) Tobin tax is a tax which is imposed on a short term currency transactions.
- 29. (3) Recently, the tenth land-port between India and Bangladesh was inaugurated at Meghalaya's Dawki. It is expected to boost trade and ease travel between the two neighbouring countries.
- 30. (1) Snell's law was discovered by Willebrord Snell in the year 1621. It describes relationship between the angle of incidence and angle of refraction.
- 31. (1) She had made an immense contribution towards restoring peace in Maoist affected areas of State.
- 32. (2) Thermal radiation is measured by Bolometer.
 - Dynamometer measures electrical power.
 - Crescograph measures the growth in plants.
 - Fathometer measures depth of the ocean.
- (2) Benzene is carcinogenic element. Important carcinogenic elements are cadmium, nickel, arsenic, beryllium and chromium.
- 34. (4) Toxoplasmosis is caused by Toxoplasma gondii which is a protozoan parasite.
 - Anemia is caused by deficiency of Vitamin B12.
 - Ariboflavinosis is caused by deficiency of Vitamin B2.
 - Beriberi is caused by lack of thiamine (vitamin B1).
- 35. (2) The principle of Maximum social advantage is considered as the 'Principle of Public Finance' .It was formulated by Hugh Dalton and Professor Pigou. It works as fundamental principle for fiscal operation of government .
- 36. (2) Hukam Singh known as Sardar Hukam Singh was elected the second Deputy Speaker (1956-1957) and third Speaker of the Lok Sabha (1962 1967). He was the governor of Rajasthan from 1967 to 1972. M. A. Ayyangar was the first Deputy Speaker of LokSabha (1952-1956).
- 37. (2) Maharaja Sawai Pratap Singh had built the Hawa Mahal in the year 1799. Ustad Lal Chand was the architect of this monument. This monument has 953 windows.
- 38. (3) A Kashmiri Century: Portrait of a Society in Flux is authored by Khemlata Wakhlu who is social worker, writer and a politician . She has devoted her fifity years in the development of Kashmiri people.
- 39. (4) Important Plant Harmones nitric oxide, abscisic acid, ethylene, gibberellin, cytokinin, salicylic acid, and auxin.
- 40. (1) The survey stated that worker population ratio increased to 35.3% compared to 34.7% in 2017-18. In Urban India Unemployment rate fell to 7.7% in 2018-19.
- 41. (2) The Godavari River is the largest river in peninsular India and is also known as Vriddha Ganga. The main tributaries of Godavari river are Pravara, Poorna, Manjra, Penganga, Wardha, Wainganga, Pranhita.
- 42. (1) Tamilians celebrate Tamil New Year on April 14 which is popularly known as Puthandu. Puthandu, also known as Varusha pirappu, marks Tamil New Year and is observed on first day of Tamil month Chithirai.



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43. (1) Preventive detention act comes under the article 22

Right to Freedom(article 19 to 22)

Right to equality (article 14 to 18)

Right against exploitation (article 23-24)

Right of Constitutional remedies (article 32)

- (4) India's highest civilian award Bharat Ratna and Padma Vibhushan were started in the year 1954. Padam Vibhushan later became Padam Vibhushan, Padam Bhushan and Padam Shri in 1955.
- 45. (2) Shahnama was written by Ferdowsi under the patronage of Samanid dynasty.

Akbarnama was written by AbulFazal.

Baburnama also known as Tuzuk-i-Baburi is the autobiography of Babur. It was written in Chagtai Turkic by Babur.

Humayunama was written by Humayun's half sister Gulbadan Begum.

- (2) Sargent commission was related to the development of Education and Literacy in India. It 46. came under the tenure of governor general lord Wavell in the year 1944. Simon commission came in tenure of lord Erwin in the year 1928.
- (3) Thermodynamic temperature is measured in Kelvin which is the SI unit of temperature. 47. Siemens is a unit of Conductance (electrical). Torr is a unit of pressure. Coulomb is the SI unit of electric charge.
- 48. (4) Machines Can See 2023 Summit' was launched recently by the UAE government. The aim of the summit is to bring together experts from across the world to discuss the future of artificial intelligence and its potential in contributing to the UAE's vision of creating the next Silicon Valley.
- 49. (2) Article 326- Elections in Lok Sabha and Vidhan Sabha will be on Adult Suffrage.

Article 315- Establishment of central and state civil services.

Article 338- National commission for Scheduled caste and Scheduled tribes.

Article 343- Hindi will be the official language of Union.

50. (4) Phanek-Innaphi is the traditional dress of Manipur.

It is worn by Manipuri women.

Sarong or a wraparound skirt is called Phanek and a Shawl or cloth wrap for the upper body is known as Innaphi.

51. (4) Let the quantity of the chemical in the bottle originally be x liters. ATQ,

Then, quantity of chemical left in bottle after 5 operation = $\frac{x\left(1-\frac{12}{x}\right)^5}{243}$ = $\frac{32}{243}$

$$\left(1 - \frac{12}{x}\right)^5 = \left(\frac{2}{3}\right)^5$$

$$\frac{x-12}{x} = \frac{2}{3}$$

$$3x - 36 = 2x$$

 \therefore x = 36 litres

Hence, 36 litres of chemical was the bottle hold originally.

(1) If the length of train-B be x metre.

Speed of train =
$$\frac{240 + x}{50} = \frac{240}{15}$$

$$\frac{240 + x}{50} = 16$$

$$240 + x = 800$$

$$x = 560 \text{ metre}$$

53. (1) Let the numbers be 2x and 3x.

$$\frac{2x+4}{3x+4} = \frac{5}{7}$$

$$15x + 20 = 14x + 28$$

$$x = 28 - 20 = 8$$

Difference between numbers = 3x - 2x = x = 8

54. (3) Let the total sum be ξx .

$$\frac{2}{3}x \times \frac{12 \times 6}{100} + \frac{1}{3}x \left(1 + \frac{10}{100}\right)^2 - \frac{x}{3} = ₹1650$$

$$\frac{48x}{100} + \frac{21x}{300} = 1650$$

$$\frac{144x + 21x}{300} = 1650$$

$$x = \frac{1650 \times 300}{165} = ₹3000$$

55. (4)
$$x^4 - 62x^2 + 1 = 0$$

$$x^2 + \frac{1}{x^2} = 62$$

$$\left(x + \frac{1}{x}\right) - 2 \times x \times \frac{1}{x} = 62$$

$$x + \frac{1}{x} = \sqrt{64} = 8$$

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

$$8^3 = x^3 + \frac{1}{x^3} + 3 \times 8$$

$$x^3 + \frac{1}{x^3} = 512 - 24$$

$$x^3 + x - 3 = 488$$

56. (2)
$$6 \times (\text{side})^2 = 13.5$$

Side =
$$\sqrt{\frac{13.5}{6}}$$
 = 1.5 cm

$$\therefore$$
 Diagonal = $\sqrt{3}$ × side = $1.5\sqrt{3}$ cm

57. (2)
$$\sec 31^{\circ} = x$$

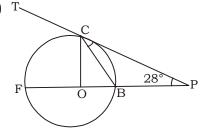
$$\sin^2 59^\circ + \frac{1}{\sec^2 31^\circ} - \frac{1}{\sin^2 59^\circ \csc 259^\circ}$$

$$= \sin^2(90^\circ - 31^\circ) + \frac{1}{\sec^2 31^\circ} - 1$$

$$= \cos^2 31^\circ + \frac{1}{\sec^2 31^\circ} - 1$$

$$= \frac{1}{\sec^2 31^\circ} + \frac{1}{\sec^2 31^\circ} - 1$$

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



$$\angle$$
OCP + \angle OPT + \angle COP = 180°

$$90^{\circ} + 28^{\circ} + COP = 180^{\circ}$$

$$\angle$$
COP = 180°-118° = 62°

In ΔOCB,

$$\angle$$
OCB + \angle OBC + \angle COB = 180°

$$x + x + 62^{\circ} = 180^{\circ}$$

(Let
$$\angle OCB = \angle OBC = x^{\circ}$$
)

$$x = \frac{180^{\circ} - 62^{\circ}}{2} = 59^{\circ}$$

$$\angle$$
OCB + \angle BCP = 90°

$$\therefore$$
 \angle BCP = 90° - 59° = 31°



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59. (1) A
7m
B
h

Let the height of tower be h m.

total height of tower and

Flag staff =
$$\frac{7}{\left(1 - \frac{\tan 30^{\circ}}{\tan 45^{\circ}}\right)} = \frac{7}{\left(1 - \frac{1}{\sqrt{3} \times 1}\right)} = \frac{7\sqrt{3}}{\sqrt{3} - 1}$$

Height of tower (h) = $\frac{7\sqrt{3}}{\sqrt{3}-1}$ - 7

$$=7\left(\frac{\sqrt{3}-\sqrt{3}+1}{\sqrt{3}-1}\right)=\frac{7}{\sqrt{3}-1} \ m$$

60. (1)
$$1 - \frac{\sin^2 A}{1 + \cos A} + \frac{1 + \cos A}{\sin A} - \frac{\sin A}{1 - \cos A}$$

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

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

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

$$1 - \frac{\sin^2 A}{1 + \cos A} + \frac{1 + \cos A}{\sin A} - \frac{\sin A}{1 - \cos A}$$

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

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

61. (1)
$$2x + \frac{2}{x} = 3$$

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

On cubing both sides,

$$x^3 + \frac{1}{x^3} + 3 \times x \times \frac{1}{x} \left(x + \frac{1}{x} \right) = \frac{27}{8}$$

$$x^3 + \frac{1}{x^3} + 3 \times \frac{3}{2} = \frac{27}{8}$$

$$x^3 + \frac{1}{x^3} = \frac{27}{8} - \frac{9}{2}$$

$$x^3 + \frac{1}{x^3} = \frac{-9}{8}$$

$$x^3 + \frac{1}{x^3} + 2 = 2 - \frac{9}{8}$$

$$x^3 + \frac{1}{x^3} + 2 = \frac{7}{8}$$

Then,

$$L = 4H$$

Now,
$$H + 4H = 125$$

$$5H = 125$$

$$H = 25$$

$$L = 25 \times 4 = 100$$

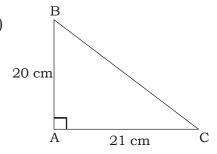
Second Number =
$$\frac{100 \times 25}{100}$$
 = 25

63. (3)
$$\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right) \dots \left(1-\frac{1}{n}\right)$$

$$=\frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \dots \times \frac{n-1}{n} = \frac{2}{n}$$



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In ΔABC,

$$AC = \sqrt{21^2 + 20^2} = \sqrt{441 + 400} = \sqrt{841} = 29 \text{ cm}$$

$$\sin B = \frac{AC}{BC} = \frac{21}{29}$$

$$\cot C = \frac{AC}{AB} = \frac{21}{20}$$

$$\sin B - \cot C = \frac{21}{29} - \frac{21}{20} = \frac{420 - 609}{580} = \frac{-189}{580}$$

M.P. =
$$x + \frac{50}{100} \times x = ₹ 1.5x$$

S.P. by Malkhan Singh = C.P. of LG

$$= 1.5x - 1.5x \times \frac{20}{100} = ₹ 1.2x$$

S.P. by LG = ₹
$$(1.2x + 20)$$

A.T.Q,

$$1.2x + 20 = x + \frac{30}{100} \times x$$

$$1.2x + 20 = 1.3x$$

$$x = 20 \times 10$$

Profit percent =
$$\frac{20}{240} \times 100 = 8.33\%$$

66. (3) Let A be x.

Then,
$$\frac{1}{6}C = x$$

$$C = x$$

And
$$B = 2x$$

Now, Average of A, B and C = 24

$$\frac{x+2x+6x}{3} = 24$$

$$3x = 24$$

$$x = \frac{24}{3} = 8$$

Now, difference between A and C = $6x - x = 5x = 5 \times 8 = 40$

67. (2) Amount of milk in 48 litres of mixture = $\frac{5}{5+x} \times 48 = \frac{240}{5+x}$ litres

So, amount of water in 48 litres of mixture = $\frac{48x}{5+x}$ litres

ATQ,

$$\frac{240}{5+x}: \left[\left\{ \frac{48x}{5+x} \right\} + 12 \right] = 2:1$$

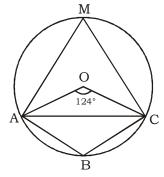
$$\frac{240}{5+x} = \left\lceil \left\{ \frac{96x}{5+x} \right\} + 24 \right\rceil$$

$$240 = 96x + 120 + 24x$$

$$120x = 240 - 120 = 120$$

$$x = \frac{120}{120} = 1$$

68. (2) Required Population = $\frac{22100}{85} \times 100 \times \frac{100}{130} = 20000$



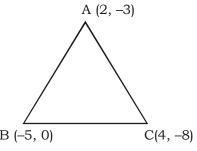
$$\angle AOC = 124^{\circ}$$

$$\angle AMC = \frac{124^{\circ}}{2} = 62^{\circ}$$

(The angle subtended by an arc at the is double the angle subtended by it at any point on the remaining part of circle.)

$$\angle ABC = 180^{\circ} - 62^{\circ} = 118^{\circ}$$

$$\angle$$
CBP = $180^{\circ} - 118^{\circ} = 62^{\circ}$



Required centroid =
$$\left(\frac{2 + (-5) + 4}{3}, \frac{-3 + 0 + (-8)}{3}\right) = \left(\frac{1}{3}, \frac{-11}{3}\right) = (1, -11)$$



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71. (4) The average number of women who study in various streams in ITI from MP in 2015

$$=\frac{245+685+1750+140+160}{5}=\frac{2980}{5}=596$$

The average number of women who study from UP in 2016

$$= \frac{110 + 280 + 1050 + 100 + 160}{5} = \frac{1700}{5} = 340$$

 \therefore Required difference = 596 – 340 = 256

72. (2) Required% =
$$\frac{3675 - 2980}{2980} \times 100 = \frac{695}{2980} \times 100 = 23.32\%$$

- (1) Required ratio = $\frac{1675}{3675}$ = 67 : 147
- 74. (4) Required% = $\frac{3675}{1700} \times 100 = \frac{3675}{17}$ $= 216.17\% \approx 216\%$
- 75. (1) Required sum of average numbers = $\frac{1}{5} \{1675 + 3675\} = \frac{1}{5} \times 5350 = 1070$



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MEANINGS IN ALPHABETICAL ORDER

Alimony a husband's or wife's court-ordered provision गुजारा-भत्ता for a spouse after separation or divorce Aromatic सुगन्धित having a pleasant and distinctive smell Assassin a murderer of an important person in a हत्यारा surprise attack for political or religious reasons Befit be appropriate for के अनुकूल कपडे पहने हए Clad clothed (किसी वस्तु) के अनुरूप Commensurate corresponding in size or degree; in proportion दु:ख में हमदर्दी दिखाना Condole express sympathy for (someone) सांत्वना देना Console comfort (someone) at a time of grief or disappointment जानवरों के किरदारों वाली एक नीति Fable a short story, typically with animals as characters, conveying a moral कथा Fiasco a complete failure असफलता वह व्यक्ति जो आमतौर पर अपनी a person who cannot control their desire Kleptomaniac चिकित्सीय स्थिति के कारण चीज़ों to steal things, usually because of a को चोरी करने की अपनी इच्छा medical condition को नियंत्रित नहीं कर सकता हो आँखों के लिए लेंस बनाने वाला Optometrist A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses Pantheist वह ब्रह्मांड की शक्तियों और उसके one who practice a doctrine that equates को भगवान मानता है God with the forces and laws of the universe मितव्ययिता extreme unwillingness to spend money or Parsimony use resources पांडित्य पूर्ण Pedantic showing much knowledge चिरस्थायी Perennial lasting or existing for a long or apparently infinite time Philanderer a man who readily or frequently enters into स्त्री लोलुप casual sexual relationships with women Rhetoric the art of effective or persuasive speaking वाकपट or writing Tart sharp or acid in taste खट्टा

शब्दश:

in exactly the same words

Verbatim



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SSC MOCK TEST - 391 (ANSWER KEY)

76. (4) 52. (1) 77. (1)53. (1) 78. (1)54. (3) 79. (4)55. (4) 80. (3)56. (2) 81. (2)57. (2) 82. 58. (2) 83. 59. (1) 84. 60. (1) 85. (3) 61. (1) 86. 62. (1) 87. 63. (3) 88. (2) 89. (3) 64. (1) 90. (2) 65. (4) 66. (3) 91. (3) 92. (1) 67. (2) 93. 68. (2) (3)69. (2) 94. (2) 70. (3) 95. (2) 71. (4) 96. (3) (2)72. (2) 97. 73. (1) 98. (3) (4)74. 99. (3)75. (1) 100. (1)

- 76. (4) No error
- 77. (1) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.
- 86. (3) Verb 'prefer' is followed by 'to'.
- 87. (3) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.
- 90. (2) The correct spelling of 'Optomatrist' is 'Optometrist'.
- 91. (2) The correct spelling of 'Perenial' is 'Perennial'.