SSC Test Series -23. Solution

1	C	26	A	51	D	76	B
2	A	27	A	52	C	77	A
3	B	28	C	53	A	78	C
4	C	29	D	54	D	79	A
5	C	30	A	55	C	80	D
6	D	31	D	56	C	81	D
7	B	32	B	57	B	82	D
8	D	33	A	58	D	83	D
9	B	34	B	59	C	84	C
10	B	35	D	60	D	85	A
11	D	36	A	61	B	86	A
12	D	37	C	62	D	87	D
13	C	38	C	63	A	88	B
14	C	39	C	64	C	89	C
15	C	40	A	65	B	90	C
16	D	41	C	66	A	91	A
17	B	42	D	67	A	92	D
18	A	43	A	68	D	93	B
19	D	44	B	69	B	94	B
20	B	45	D	70	C	95	A
21	B	46	B	71	B	96	B
22	B	47	D	72	C	97	A
23	D	48	A	73	D	98	A
24	C	49	D	74	B	99	B
25	B	50	C	75	B	100	C

Explanatory Solution

Mathematics

26. 18 W × 12 = 12M × 9

2W = 1M

I am do same work as done by 2 women.

Let 8 men and 8 women complete the same in x days.

∴ (8M + 8W) × xd = 18W × 12

We put 8M = 16W

(16W + 8W) × x. d = 18W × 12D

24W. xd = 18W × 12D

x = 9 days

27. Let the cost of table = x

And cost of book = y

According to question

$$\frac{88\times x}{100}+\frac{119\times y}{100}=x+y+160$$

88x + 119y = 100x + 1ooy + 16000

12x – 19y + 16000 = 0 ...(i)

(ii) Condition $\frac{x\times 112}{100}+\frac{y\times 84}{100}=x+y-40$

13x – 16y + 4000 = 0 .....(ii)

On On saving equation (i) and (ii)

y = 400

Cost of book = 400

28. Let Gaurave get Rs. 100 from his father.

Hostel		Books	Remain
40	20		100-60 = 40

Transport - $\frac{40\times 50}{100}=20$

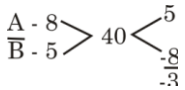
Remain amount = 40 – 20 = 20

Let amount = 450 × 2 = 900

Value of 100 = $\frac{900}{20}\times 100$

= Rs. 4500

29.



Total quantity of tank = 40 unit

Already full = $\frac{40\times 3}{4}=30$ unit

of pipe A + B opened both together they fill 3 unit per hour.

Time do empty tank = $\frac{30}{3}=10$ hours

30. Let total Vote = 100

Total vote	In Valid	Valid	Winner	IInd person
100	10	90	$\frac{90\times 80}{100}=72$	90 – 72 = 18

Votes get by IInd person = $\frac{1,80,000}{100}\times 18$

= 32, 400

31. D. Area of the floor = 8 × 6 = 48 sq. m

= 4800 sq. dm.

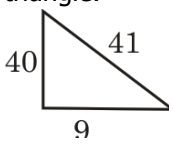
Area of a square tile = 4 × 4 = 16 sq. dm

☐ Number of tiles =

4800/16 = 300

32. From sides (9, 40 + 41)

It will be a right angle triangle.



In right triangle distance between its or the center and circumcentre $=\frac{\text{hypotenous}}{2}$

$=\frac{41}{2}=20.5$ cm

33. $x=\sqrt{a}+\frac{1}{\sqrt{a}}, \quad y=\sqrt{a}-\frac{1}{\sqrt{a}}$

$x^2=a+\frac{1}{a}+2, \quad y^2=a^2+\frac{1}{a}-2$

Now, $x^4 + y^4 - 2x^2y^2$

Put the value of x + y

$$\left[a + \frac{1}{a} + 2 - a - \frac{1}{a} + 2\right]^2$$

$$\left[4\right]^2 = 16$$

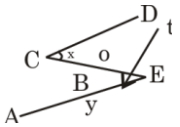
34. (B) $\cos^2\theta + \cos^4\theta = 1$

$\Rightarrow \cos^4\theta = 1 - \cos^2\theta = \sin^2\theta$

$\Rightarrow \tan^2\theta = \cos^2\theta$

$\therefore \tan^2\theta + \tan_4\theta = \cos^2\theta + \cos^4\theta = 1$

35.



$\angle BOE = \pi r$

$\angle EBO = \pi - y$

$\angle y = t + y$ Let $\angle BEO = t$

By the property of triangle

$\pi - y + t + \pi = \pi$

$t - x + y = \pi$

36. $\sin\theta - \cos\theta = \frac{7}{13}$

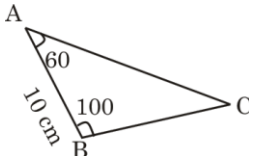
$\sin\theta, \frac{L}{K}, \cos\theta = \frac{A}{K}$

$\frac{12}{13} - \frac{5}{13} = \frac{7}{13}$

So, $\sin\theta + \cos\theta = \frac{12}{13} + \frac{5}{13}$

$= \frac{17}{13}$

37. $AC = \frac{AB\sin B}{\sin\left[180 - (A+B)\right]}$



$AC = \frac{10\sin 100}{\sin(180°160°)}$

$AC = \frac{10\sin 100°}{\sin 20°}$

38.(*)

39. For circle r = 8, R = 12

For cylinder = $h - h_1$, $R = R_1$

According to question

$\pi R_1^2 - \pi r^2 = 2\pi rR(h + R_1)$

$\pi\left[12^2 - 8^2\right] = 2\pi R_1(h + R_1)$

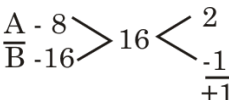
$80 = 2R_1\left[h + R_1\right]$

$40 = R_1h + R_1^2$

$R_1h = 40 - R_1^2$

$h = \frac{40 - R_1^2}{R}$

40.



Let A fill the table and B empty the table.

Total quantity of table = 16 unit

If A + B both opened then tank fill 1 unit per hour.

Time to fill tank $= \frac{16}{1} = 16$ hrs

41. $\sqrt{7\sqrt{7\sqrt{7\sqrt{7.....}}}} = (343)^{y-1}$

$7 = (7^3)^{y-1}$

$7^1 = 7^{3y-3}$

Comparing by power

$\Rightarrow$ 1 = 3y – 3

$\Rightarrow$ 3y = 4

$\Rightarrow \boxed{y = \frac{4}{3}}$

42. $a = \frac{1}{2-\sqrt{3}} + \frac{1}{3-\sqrt{8}} + \frac{1}{4-\sqrt{15}}$

$= 2 + \sqrt{3} + 3 + \sqrt{8} + 4 + \sqrt{15}$

$= 9 + \sqrt{3} + 2\sqrt{2} + \sqrt{15}$

43. (*)

44.(*)

45. $\sqrt{d^2 - (R-r)^2}$

46. Let total distance = d km

Speed with downstream = 5 + 1.5 = 6.5 km/h

" " upstream = 5 – 1.5 = 3.5 km/h

According to question

$\frac{d}{6.5} + \frac{d}{3.5} = 1$

$\frac{2d}{13} + \frac{2d}{7} = 1$

14d + 26d = 91

40d = 91

$d = \frac{91}{40}$

= 2.275 km

47.8 × 15 y = 120

$\frac{8x}{120}+\frac{15y}{120}=1$

$\frac{x}{15}+\frac{y}{8}=1$

a = 15, b = 8

Length between the $=\sqrt{a^2+b^2}$

$=\sqrt{15^2+8^2}=\sqrt{289}$

= 17 unitts

48. Reverse in 2007-08 = 5040

" " 2005-05 = 3360

33601 = 5040

56a = 84

2a = 3

a = 1.5

49. Height increase in 2002-03

$\%=\frac{3720-2640}{2640}\times 100$

$=40.90\%$

50.(C) The tenth observation = 17+9 =26

ENGLISH LANGUAGE

76. 'Get' is a causative verb here. After 'Get' use object then third form of the verb.
Replace : 'Be published' with 'published' only.
Ans. (d)

77. Use 'Hard' in place of 'Hardly'. 'Hard' has been used as an 'adverb' here.
Ans. (a)

78. (c)

79. (a)

80. Use 'about' 'it will depend on the sentence nature"
About-के बारे में
Ans. (d)

81. Considerate-(Adjec) दूसरे का ध्यान या लिहाज रखने वाला।
Ans. (d)

82. Veneration- आदर सम्मान Any word having 'ion' as suffix will be a noun.
Syn- Reverence
Remorse-पछतावा
Syn-Regreat, Expiation, Penitence
Ans. (d)

83. Ans. (d) Corrigible –(Adjec) जिसे सुधारा ना जा सके।

84. To put a spoke in one's wheel-अडंगा लगाना
Ans. (c)

85. Carry the can- किसी भी गलती या गलत कार्य की जिम्मेदारी लेना।
Ans. (a)

86. Take time by the forelock-मौका हथियाना
(Seize an opportunity)
Ans. (a)

87. Alleviate-कम करना
(esp- in case of pain, stress etc).
Ans. (d)

88. Use 'more' in place of 'much'.
Ans. (b)

89. look for $\rightarrow$ Search
Ans. (c)

90. Espionage- जासूसी Syn-snoope
Strategy-रणनीति
Diplomacy-कूटनीति
Enumeration-शुमार, गणना, गिनती

91. Turn coat-दलबदलू
Scape goat-बली का बकरा
Mercenary-किराये का टट्टू, भोडे का
Immigramt-अप्रवासी, परदेशी Ant- Emmigramt
Ans. (b)

92. Bohemain-रूढिमुक्त (Adj) – जो परम्परा या रिवाज को नहीं मानता
Artisan- शिल्पकार, कारीगर
Ans. (a)

93. (b) 94. (a) 95. (a) 96. (b) 97. (c)