ALGEBERA-01

SOME BASIC CONCEPTS

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MATHS EXPERT

ALGEBRA (Practice Sheet – 1)

Some Basic Concepts

1. If $x+\frac{1}{x}=3$ Find

(i) $x^2+\frac{1}{x^2}$ (ii) $x^3+\frac{1}{x^3}$

(iii) $x^4+\frac{1}{x^4}$ (iv) $x^5+\frac{1}{x^5}$

(v) $x^6+\frac{1}{x^6}$ (vi) $x^7+\frac{1}{x^7}$

2. If $x-\frac{1}{x}=4$, Find

(i) $x^2+\frac{1}{x^2}$ (ii) $x^2-\frac{1}{x^2}$

(iii) $x^3-\frac{1}{x^3}$ (iv) $x^4+\frac{1}{x^4}$

(v) $x^5-\frac{1}{x^5}$ (vi) $x^6-\frac{1}{x^6}$

3. If $a+\frac{1}{a}=3$, then $\left(a^4+\frac{1}{a^4}\right)$ is equal to :

SSC CGL 6 June 2019 (Evening)

(a) 77 (b) 47
(c) 81 (d) 27

4. If $x+\frac{1}{x}=\sqrt{5}$, then $x^3+\frac{1}{x^3}$ is equal to :

SSC CGL 10 June 2019 (Evening)

(a) $3\sqrt{5}$ (b) $4\sqrt{5}$
(c) $2\sqrt{5}$ (d) $5\sqrt{5}$

5. If $x+\frac{1}{x}=3$, then $x^3+\frac{1}{x^3}$ is equal to :

SSC CGL 10 June 2019 (Afternoon)

(a) 27 (b) 36
(c) 24 (d) 18

6. If $\sqrt{x}+\frac{1}{\sqrt{x}}=\sqrt{6}$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 11 June 2019 (Morning)

(a) 62 (b) 14
(c) 16 (d) 36

7. If $\sqrt{x}+\frac{1}{\sqrt{x}}=\sqrt{7}$, then $x^3+\frac{1}{x^3}$ is equal to :

SSC CGL 11 June 2019 (Evening)

(a) 140 (b) 130
(c) 120 (d) 110

8. $\sqrt{x}+\frac{1}{\sqrt{x}}=2\sqrt{2}$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 12 June 2019 (Morning)

(a) 34 (b) 64
(c) 36 (d) 32

9. If $x^2+1=3x$, then the value of $\frac{x^4+x^{-2}}{x^2+5x+1}$ is:

SSC CHSL 2 July 2019 (Evening)

(a) $2\frac{1}{2}$ (b) $2\frac{1}{4}$
(c) $4\frac{1}{2}$ (d) $3\frac{1}{2}$

10. If $a+\frac{1}{a}=3$, then $a^6+\frac{1}{a^6}$ is equal to :

SSC CHSL 210July 2019 (Afternoon)

(a) 319 (b) 322
(c) 780 (d) 730

11. If $x^2+3x+1=0$, then what is the value of $x^6+\frac{1}{x^6}$?

SSC CGL 3 March 2020 (Afternoon)

(a) 324 (b) 322
(c) 318 (d) 327

12. If $x^2-2\sqrt{5}x+1=0$, then what is the value of $x^5+\frac{1}{x^5}$?

SSC CGL 5 March 2020 (Morning)

(a) $610\sqrt{5}$ (b) $408\sqrt{5}$
(c) $612\sqrt{5}$ (d) $406\sqrt{5}$

13. If $x+\frac{1}{x}=8$, then find the value of $\frac{5x}{x^2+1-6x}$.

SSC CHSL 14/10/2020 (Evening)

(a) 2.5 (b) 6
(c) 5 (d) 6.5

14. If $x+\frac{1}{x}=5$, $x \neq 0$ then the value of $\frac{x^4+\frac{1}{x^2}}{x^2-3x+1}$ is equal to :

SSC CHSL 20/10/2020 (Morning)

(a) 55 (b) 60
(c) 65 (d) 50

15. If $x+\frac{1}{x}=5$ then $\frac{x^4+3x^3+5x^2+3x+1}{x^4+1}$ is

(a) $\frac{43}{23}$ (b) $\frac{47}{21}$
(c) $\frac{41}{23}$ (d) $\frac{45}{21}$

16. If $x^2-3x-1=0$, then the value of $(x^2+8x-1)(x^3+x^{-1})^{-1}$ is :

SSC CGL 7 June 2019 (Afternoon)

(a) $\frac{3}{8}$ (b) 8
(c) 1 (d) 3

17. If $\frac{6x}{2x^2+5x-2}=1$, $x>0$, then the value of $x^3+\frac{1}{x^3}$ is :

SSC CGL 7 June 2019 (Evening)

(a) $\frac{3}{8}\sqrt{17}$ (b) $\frac{5}{8}\sqrt{17}$
(c) $\frac{5}{16}\sqrt{17}=$ (d) $\frac{3}{4}\sqrt{17}$

18. If $4x^2-6x+1=0$, then the value of $8x^3+(8x^3)^{-1}$ is :

SSC CGL 10 June 2019 (Morning)

(a) 36 (b) 13
(c) 18 (d) 11

19. If $x+\frac{1}{x}=6$, find $x^3+x^2+\frac{1}{x^3}+\frac{1}{x^2}$

(a) 252 (b) 222
(c) 232 (d) 196

20. If $x+\frac{1}{x}=4$, find $\frac{x^3+\frac{1}{x}}{x^2-x+1}$

(a) $\frac{3}{2}$ (b) $\frac{7}{3}$
(c) $\frac{14}{3}$ (d) $\frac{11}{3}$

21. If $x-\frac{1}{x}=10$, then $x^3-\frac{1}{x^3}$ is equal to :

SSC CHSL 4 July 2019 (Afternoon)

(a) 970 (b) 1000
(c) 1030 (d) 1100

22. If $\sqrt{x}-\frac{1}{\sqrt{x}}=4$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 10 June 2019 (Morning)

(a) 192 (b) 326
(c) 322 (d) 256

23. If $x-5\sqrt{x}-1=0$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 10 June 2019 (Evening)

(a) 625 (b) 731
(c) 729 (d) 727

24. If $\sqrt{x}-\frac{1}{\sqrt{x}}=\sqrt{6}$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 11 June 2019 (Afternoon)

(a) 62 (b) 40
(c) 54 (d) 66

25. If $\sqrt{x}-\frac{1}{\sqrt{x}}=2\sqrt{2}$, then $x^2+\frac{1}{x^2}$ is equal to :

SSC CGL 12 June 2019 (Afternoon)

(a) 102 (b) 98
(c) 104 (d) 100

26. If $x-\frac{1}{x}=6$, then $x^3-\frac{1}{x^3}=?$

SSC CPO 12 March 2019 (Evening)

(a) 216 (b) 176
(c) 234 (d) 198

27. If $x-\frac{1}{x}=13$, then the value of $x^2+\frac{1}{x^2}=?$

SSC CHSL 20/10/2020 (Morning)

(a) 171 (b) 169
(c) 167 (d) 165

28. If x is real, and $x^4-5x^2-1=0$, then the value of $\left(x^6-3x^2+\frac{3}{x^2}-\frac{1}{x^6}+1\right)$ is :

SSC CHSL 3 July, 2019 (Morning)

(a) 126 (b) 110
(c) 116 (d) 96

29. If $x\left(3-\frac{2}{x}\right)=\frac{3}{x}$, then find the value of $x^2+\frac{1}{x^2}$

(a) $2\frac{1}{9}$ (b) $2\frac{4}{9}$
(c) $3\frac{1}{9}$ (d) $3\frac{4}{9}$

30. If $x^2+\frac{1}{x^2}=27$, then find

(i) $x+\frac{1}{x}$ (ii) $x-\frac{1}{x}$

31. If $x^4 + \frac{1}{x^4} = 23$, find

(i) $x + \frac{1}{x}$ (ii) $x^3 + \frac{1}{x^3}$

32. If $x^4 + x^{-4} = 2207$, $(x > 0)$, then the value of $x + x^{-1}$ is :

SSC CHSL 4 July 2019 (Afternoon)

(a) 19 (b) 7
(c) 11 (d) 9

33. If $x^4 + x^{-4} = 1442$, $(x > 0)$, then the value of $x - x^{-1}$ is :

SSC CHSL 4 July 2019 (Evening)

(a) 7 (b) 8
(c) 6 (d) 15

34. If $x^4 + x^{-4} = 47$, $(x > 0)$, then the value of $(2x - 3)^2$ is :

SSC CHSL 8 July 2019 (Evening)

(a) 2 (b) 3
(c) 5 (d) 4

35. If $x^4 + x^{-4} = 194$, $(x > 0)$, then the value of $(2x - 4)^2$ is :

SSC CHSL 9 July 2019 (Morning)

(a) 15 (b) 20
(c) 12 (d) 16

36. If $x^4 + x^{-4} = 1154$, $(x > 0)$, then the value of $2(x - 3)^2$ is :

SSC CHSL 9 July 2019 (Afternoon)

(a) 16 (b) 12
(c) 20 (d) 15

37. If $x^8 - 1442x^4 + 1 = 0$, then a possible value of $x - \frac{1}{x}$ is :

SSC CGL Tier-II (11 September 2019)

(a) 5 (b) 8
(c) 4 (d) 6

38. If $x^4 + \frac{1}{x^4} = 14159$, then the value of $x + \frac{1}{x}$ is

SSC CHSL 19 March 2020 (Afternoon)

(a) 9 (b) 12
(c) 10 (d) 11

39. If $x^4 + x^{-4} = 194$, $(x > 0)$, then the value of $(x - 2)^2$ is :

SSC CGL 4 June 2019 (Morning)

(a) 1 (b) 6
(c) 2 (d) 3

40. If $x^4 + \frac{1}{x^4} = 322$, find $x^3 - \frac{1}{x^3}$

41. If $a + \frac{1}{a} = 2$, then $a^4 - \frac{1}{a^4}$ is equal to :

SSC CHSL 10 July 2019 (Morning)

(a) 0 (b) $\frac{1}{4}$
(c) 1 (d) 4

42. If $x + x^{-1} = 2$, then the value of $x^3 + x^{-3}$ is :

SSC CPO 16 March 2019 (Evening)

(a) 1 (b) $\frac{1}{2}$
(c) 2 (d) 3

43. If $a + \frac{1}{a} + 2 = 0$, then the value of $a^{15} - \frac{1}{a^{100}}$ is:

SSC CHSL 21 October 2020 (Evening)

(a) 0 (b) 2
(c) – 2 (d) 1

44. If $p + \left(\frac{1}{p}\right) = 2$, then find the value of $p \times p \times p$.

SSC CHSL 18 March 2020 (Afternoon)

(a) 4 (b) 8
(c) 1 (d) 2

45. If $x + \frac{1}{x} = 2$, find

(i) $x^{20} + x^{19} + x^{18} + \ldots\ldots\ldots + x^2 + x + 1$
(ii) $x^{49} - x^{48} + x^{47} - x^{46} + \ldots\ldots\ldots + x^3 - x^2 + x + 1$
(iii) $x^{12} + \frac{1}{x^{12}}$
(iv) $x^{17} + \frac{1}{x^9}$
(v) $x^{15} - \frac{1}{x^{17}}$

46. If $x + \frac{1}{x} = -2$

(i) $x^{39} + x^{38} + \ldots\ldots\ldots + x^2 + x + 1$
(ii) $x^{100} - x^{99} + x^{98} - x^{97} + \ldots\ldots\ldots + x^2 - x + 1$
(iii) $x^5 - \frac{1}{x^5}$ (iv) $x^{18} + \frac{1}{x^{18}}$
(v) $x^7 - \frac{1}{x^9}$

47. If $x + \frac{1}{x} = 1$, find

(i) $x^{18} + x^{12} + x^6 + 1$
(ii) $x^{99} + x^{96} + x^{93} + x^{90} + \ldots\ldots\ldots + x^6 + x^3 + 1$
(iii) $x^{45} - x^{42} + x^{39} - x^{36} + \ldots\ldots + x^9 - x^6 + x^3 + 1$
(iv) $x^{32} + x^{46} + x^{90} + 2$

48. If $x = 2 + \sqrt{3}$, find $x + \frac{1}{x}$

(a) 5 (b) 4
(c) –4 (d) $2\sqrt{3}$

49. If $x = 3 + 2\sqrt{2}$, find $x^2 + \frac{1}{x^2}$

(a) 36 (b) 30
(c) 34 (d) 32

50. If $m = \frac{\sqrt{3}+1}{\sqrt{3}-1}$ & $n = \frac{\sqrt{3}-1}{\sqrt{3}+1}$ then the value of

$m^2 + n^2$ is

(a) 14 (b) 13
(c) 15 (d) 10

51. If $x = 7 + 4\sqrt{3}$ then $x - \frac{1}{x}$

(a) $8\sqrt{3}$ (b) 4
(c) –4 (d) $-2\sqrt{3}$

52. If $x = \sqrt{3} - \sqrt{2}$, then the value of $x^3 - x^{-3}$ is :

SSC CHSL 5 July 2019 (Afternoon)

(a) $22\sqrt{3}$ (b) $-22\sqrt{2}$
(c) $22\sqrt{2}$ (d) $-22\sqrt{3}$

53. If $x = 2 + \sqrt{3}$ then the value of $x^3 - x^{-3}$ is :

SSC CHSL 8 July 2019 (Afternoon)

(a) – 52 (b) $-30\sqrt{3}$
(c) $30\sqrt{3}$ (d) 52

54. If $x = 2 + \sqrt{5}$ then the value of $x^3 - x^{-3}$ is :

SSC CHSL 8 July 2019 (Evening)

(a) – 52 (b) 52
(c) 76 (d) – 76

55. If $x = 2 + \sqrt{5}$ then the value of $x^3 + x^{-3}$ is :

SSC CHSL 9 July 2019 (Morning)

(a) $40\sqrt{5}$ (b) $34\sqrt{5}$
(c) $46\sqrt{5}$ (d) $36\sqrt{5}$

56. If $x = 2 + \sqrt{3}$ then the value of $x^3 + x^{-3}$ is :

SSC CHSL 8 July 2019 (Morning)

(a) 52 (b) – 52
(c) $-52\sqrt{3}$ (d) $52\sqrt{3}$

57. If $x = 3 + 2\sqrt{2}$, then the value of $x^2 + \frac{1}{x^2}$ is:

SSC CHSL 20/10/2020 (Afternoon)

(a) 30 (b) 36
(c) 32 (d) 34

58. If $\sqrt{x} = \sqrt{3} - \sqrt{5}$, then the value of $x^2 - 16x + 6$ is :

SSC CHSL 21/10/2020 (Afternoon)

(a) 0 (b) 4
(c) 2 (d) – 2

59. If $x = 3 + 2\sqrt{2}$, then the value of $\sqrt{x} - \frac{1}{\sqrt{x}}$ is:

SSC CHSL 26/10/2020 (Evening)

(a) 2 (b) 1
(c) 0 (d) 3

60. If $x = 1 + \sqrt{2}$, then the value of $\sqrt{x} + \left(\frac{1}{\sqrt{x}}\right)$ is:

SSC CHSL 17/03/2020 (Evening)

(a) 2.1014 (b) 2.1973
(c) 1.9876 (d) 1.9996

61. If $x = 1 - \sqrt{2}$, then $\left(x - \frac{1}{x}\right)^3$ is

(a) –8 (b) 8
(c) $2\sqrt{2}$ (d) 1

62. If $a(2 + \sqrt{3}) = b(2 - \sqrt{3}) = 1$ then $\frac{1}{a^2+1} + \frac{1}{b^2+1}$ is

(a) –1 (b) 1
(c) 4 (d) 9

63. If $\frac{x^{24}+1}{x^{12}} = 7$ then $\frac{x^{72}+1}{x^{36}}$ is

(a) 343 (b) 433
(c) 432 (d) 322

64. If $x + \frac{1}{x+1} = 1$ then $(x+1)^5 + \frac{1}{(x+1)^5}$

(a) 1 (b) 2
(c) 4 (d) 8

65. If $a - \frac{1}{a-3} = 5$ then $(a-3)^3 - \frac{1}{(a-3)^3}$ is

(a) 7 (b) 14
(c) 2 (d) 5

66. If $a^2 + a + 1 = 0$ then the value of a^9 is

(a) 2 (b) 3
(c) 1 (d) 0

67. If $x + \frac{1}{x} = \sqrt{3}$, find

(i) $x^{90} + \frac{1}{x^{90}}$ (ii) $x^{92} + \frac{1}{x^{92}}$

(iii) $x^{102} + x^{96} + x^{101} + x^{95} + x^{100} + x^{94}$ is

(iv) $x^6 - \frac{1}{x^6} + 2$ (v) $x^{18} + x^{12} + x^6 + 1$

68. If $x + \frac{1}{x} = \sqrt{3}$, then the value of $x^{18} + x^{12} + x^6 + 1$ is :

SSC CHSL 21/10/2020 (Evening)

(a) 0 (b) 2
(c) 3 (d) 1

69. If $x + \frac{1}{x} = -\sqrt{3}$ then $x^{67} + x^{53} + x^{43} + x^{29} + x^{24} + x^{12} + x^6 + 3$ is

(a) $\sqrt{3}$ (b) 0
(c) $2\left(2+\sqrt{3}\right)$ (d) $2\left(2-\sqrt{3}\right)$

70. If $5x + \frac{1}{3x} = 5$, find the value of $9x^2 + \frac{1}{25x^2}$

(a) 0 (b) 5
(c) 4 (d) 7.8

71. If $3x + \frac{1}{2x} = 5$ then find $8x^3 + \frac{1}{27x^3}$

(a) $118\frac{1}{2}$ (b) $30\frac{10}{27}$
(c) 0 (d) 1

72. If $x + \frac{1}{16x} = 3$, then the value of $16x^3 + \frac{1}{256x^3}$ is :

SSC CGL Tier II (12 September 2019)

(a) 423 (b) 441
(c) 432 (d) 414

73. If $5x + \frac{1}{3x} = 4$, then the value of $9x^2 + \frac{1}{25x^2}$ is :

SSC CGL 4 March 2020 (Morning)

(a) $\frac{174}{125}$ (b) $\frac{144}{125}$
(c) $\frac{114}{25}$ (d) $\frac{119}{25}$

74. If $20x^2 - 30x + 1 = 0$, then what is the value of $25x^2 + \frac{1}{16x^2}$ is :

SSC CGL 5 March 2020 (Afternoon)

(a) $53\frac{1}{2}$ (b) $58\frac{1}{2}$
(c) $53\frac{3}{4}$ (d) $58\frac{3}{4}$

75. If $4a + \frac{1}{5a} = 4$, then the value of $25a^2 + \frac{1}{16a^2}$ is :

SSC CHSL 21/10/2020 (Evening)

(a) $\frac{45}{2}$ (b) $\frac{55}{2}$
(c) $\frac{43}{2}$ (d) $\frac{45}{4}$

76. If $2a + \frac{1}{a} = 4$, then the value of $a^2 + \frac{1}{4a^2}$ is :

SSC CHSL 26/10/2020(Morning)

(a) 3 (b) 4
(c) 5 (d) 12

77. If $7x - \frac{7}{2x} = 14$, then find $x^3 - \frac{1}{8x^3}$

(a) 9 (b) 8
(c) 27 (d) 11

78. If $a = \frac{1}{a-5}$ $(a > 0)$ then $a + \frac{1}{a}$ is

(a) $\sqrt{29}$ (b) $\pm\sqrt{29}$
(c) $-\sqrt{29}$ (d) $\sqrt{27}$

79. If $a = \sqrt{6} + \sqrt{5}$, $b = \sqrt{6} - \sqrt{5}$ then $2a^2 - 5ab + 2b^2 = ?$

(a) 38 (b) 39
(c) 40 (d) 41

80. If $x^4 - 83x^2 + 1 = 0$, then a value of $x^3 - x^{-3}$ can be.

CGL Tier II (12 September 2019)

(a) 758 (b) 756
(c) 739 (d) 737

81. If $\frac{3(x^2+1) - 7x}{3x} = 6$, $x \neq 0$, then the value of $\sqrt{x} + \frac{1}{\sqrt{x}}$ is :

CGL Tier II (13 September 2019)

(a) $\sqrt{\frac{25}{3}}$ (b) $\frac{\sqrt{11}}{3}$
(c) $\sqrt{\frac{35}{3}}$ (d) $\sqrt{\frac{31}{3}}$

82. If $a^3 + \frac{1}{a^3} = 52$, then the value of $2\left(a + \frac{1}{a}\right)$ is :

SSC CGL 6 March 2020 (Evening)

(a) 6 (b) 2
(c) 8 (d) 4

83. If $x^2 - 4x + 4 = 0$, then value of $16\left(x^4 - \frac{1}{x^4}\right)$ is:

SSC CGL 6 March 2020 (Evening)

(a) $\frac{127}{16}$ (b) 255
(c) $\frac{255}{16}$ (d) 127

84. If $a^4 + \frac{1}{a^4} = 50$, $a > 0$ then the value of $a^3 + \frac{1}{a^3}$.

SSC CGL 7 March 2020 (Evening)

(a) $\sqrt{2\left(1+\sqrt{13}\right)}\left(-1+2\sqrt{13}\right)$

(b) $\sqrt{2\left(1-\sqrt{13}\right)}\left(-1+2\sqrt{13}\right)$

(c) $\sqrt{2\left(1+\sqrt{13}\right)}\left(-1-2\sqrt{13}\right)$

(d) $\sqrt{2\left(1+\sqrt{13}\right)}+\left(-1+2\sqrt{13}\right)$

85. If $x^4+\frac{1}{x^4}=\frac{257}{16}$, then find $\frac{8}{13}\left(x^3+\frac{1}{x^3}\right)$, where x > 0.

CHSL 13/10/2020 (Afternoon)

(a) 5 (b) 4
(c) 6 (d) 8

86. If $a^2+\frac{2}{a^2}=16$, then find the value of $\frac{72a^2}{a^4+2+8a^2}$.

CHSL 19/10/2020 (Afternoon)

(a) 3 (b) 1
(c) 4 (d) 2

87. If $x\left(5-\frac{2}{x}\right)=\frac{5}{x}$, then the value of $x^2+\frac{1}{x^2}$ is equal to :

CHSL 21/10/2020 (Morning)

(a) $2\frac{4}{25}$ (b) $2\frac{1}{25}$

(c) $\frac{4}{25}$ (d) $2\frac{3}{25}$

88. Given that $x^8 - 34x^4 + 1 = 0$, $x > 0$, what is the value of $(x^3 + x^{-3})$?

CGL 2019 Tier II (15/11/2020)

(a) $5\sqrt{8}$ (b) $6\sqrt{6}$
(c) $5\sqrt{6}$ (d) $6\sqrt{8}$

89. If $3x^2 - 5x + 1 = 0$, then the value of $\left(x^2+\frac{1}{9x^2}\right)$ is :

CGL 2019 Tier II (15/11/2020)

(a) $1\frac{2}{3}$ (b) $1\frac{1}{3}$

(c) $2\frac{1}{3}$ (d) $2\frac{1}{9}$

90. If $2x^2 - 7x + 5 = 0$, then what is the value of $\left(x^2+\frac{25}{4x^2}\right)$ is :

CGL 2019 Tier II (16/11/2020)

(a) $9\frac{1}{2}$ (b) $7\frac{1}{4}$

(c) $9\frac{3}{4}$ (d) $5\frac{1}{2}$

91. If $x-\frac{1}{x}=5$, $x\neq 0$, then what is the value of $\frac{x^6+3x^3-1}{x^6-8x^3-1}$?

CGL 2019 Tier II (16/11/2020)

(a) $\frac{13}{12}$ (b) $\frac{11}{13}$

(c) $\frac{3}{8}$ (d) $\frac{4}{9}$

92. If $x+\frac{16}{x}=8$, then the value of $x^2+\frac{32}{x^2}$ is :

CGL 2019 Tier II (16/11/2020)

(a) 24 (b) 18
(c) 20 (d) 16

93. If $x\left(3-\frac{2}{x}\right)=\frac{3}{x}$, then the value of $x^3-\frac{1}{x^3}$ is equal to :

CGL 2019 Tier II (18/11/2020)

(a) $\frac{61}{27}$ (b) $\frac{52}{27}$

(c) $\frac{8}{27}$ (d) $\frac{62}{27}$

94. If $x^2+\frac{1}{x^2}=7$, then the value of $x^3+\frac{1}{x^3}$ where x > 0 is equal to :

CGL 2019 Tier II (18/11/2020)

(a) 15 (b) 16
(c) 12 (d) 18

95. If $\sqrt{x}+\frac{1}{\sqrt{x}}=3$, then the value of $x^3+\frac{1}{x^3}$ is :

CGL 2019 Tier II (18/11/2020)

(a) 324 (b) 322
(c) 326 (d) 422

96. If $x-\frac{3}{x}=6$, $x\neq 0$, then the value of $\frac{x^4-\frac{27}{x^2}}{x^2-3x-3}$ is :

CGL 2019 Tier II (18/11/2020)

(a) 90 (b) 270
(c) 80 (d) 54

97. If $x^2 - 3x + 1 = 0$, then the value of $\left(x^5+\frac{1}{x^3}\right)\div(x^2+1)$ is :

CPO 2019 24/11/2020 (Morning)

(a) 9 (b) 47/3
(c) 7 (d) 5

98. If $x + y = 1$ and $xy(xy - 2) = 12$, then the value of $x^4 + y^4$ is :

SSC CGL 4 June 2019 (Evening)

(a) 19 (b) 25
(c) 20 (d) 23

99. If $x^4 - 6x^2 - 1 = 0$, then the value of

$$x^6 - 5x^2 + \frac{5}{x^2} - \frac{1}{x^6} + 5 = ?$$

SSC CGL 4 June 2019 (Morning)

(a) 219 (b) 209
(c) 204 (d) 239

100. If $x + \frac{1}{x} = 4\sqrt{3}$, then find the value of $x^2 + \frac{1}{x^2}$.

SSC CPO 14 March 2019 (Morning)

(a) 46 (b) 44
(c) 56 (d) 52

Answer Key

1.(i) 7	(ii) 18	(iii) 47	(iv) 123	(v) 322	(vi) 843				
2.(i) 18	(ii) $\pm 8\sqrt{5}$	(iii) 76	(iv) 322	(v) 1364	(vi) $\pm 2584\sqrt{5}$				
3.(b)	4.(c)	5.(d)	6.(b)	7.(d)	8.(a)	9.(b)	10.(b)	11.(b)	12.(a)
13.(a)	14.(a)	15.(a)	16.(c)	17.(b)	18.(c)	19.(c)	20.(c)	21.(c)	22.(c)
23.(d)	24.(a)	25.(b)	26.(c)	27.(a)	28.(a)	29.(b)			
30.(i) $\sqrt{29}$	(ii) 5	31.(i) $\sqrt{7}$	(ii) $4\sqrt{7}$						
32.(b)	33.(c)	34.(c)	35.(c)	36.(a)	37.(d)	38.(d)	39.(d)		40. ± 76
41.(a)	42.(c)	43.(c)	44.(c)						
45.(i) 21	(ii) 2	(iii) 2	(iv) 2	(v) 0					
46.(i) 0	(ii) 101	(iii) 0	(iv) 2	(v) 0					
47.(i) 4	(ii) 0	(iii) -14	(iv) 2						
48.(b)	49.(c)	50.(a)	51.(a)	52.(b)	53.(c)	54.(c)	55.(b)	56.(a)	57.(d)
58.(c)	59.(a)	60.(b)	61.(b)	62.(b)	63.(d)	64.(b)	65.(b)	66.(c)	
67.(i). –2		(ii). –1		(iii). 0		(iv). 2		(v). 0	
68.(a)	69.(c)	70.(d)	71.(b)	72.(a)	73.(c)	74.(c)	75.(a)	76.(a)	77.(d)
78.(a)	79.(b)	80.(b)	81.(d)	82.(c)	83.(b)	84.(a)	85.(a)	86.(a)	87.(a)
88.(a)	89.(d)	90.(b)	91.(a)	92.(b)	93.(d)	94.(d)	95.(b)	96.(a)	97.(b)
98.(b)	99.(b)	100.(a)							

All The Best