SECTIONWISE SOLUTIONS:
QUANT

NUMERICAL ABILITY

41. (1) $\frac{12}{17} \times \frac{25}{100} \times 1020 = 120+?$
$\Rightarrow$ 180=120+?
$\Rightarrow$?=180−120
=60

42. (2) $\frac{25\times26}{13} - 9 = ? - 16$
$\Rightarrow$ 41=?−16
$\Rightarrow$?=41+16=57

43. (2) $\sqrt{270 + 150 + 21} = ?^2$
$\Rightarrow$ $\sqrt{441} = ?^2$
$\Rightarrow$ $?^2 = 21$
$\Rightarrow$ $? = \sqrt{21}$

44. (4) ? = 466+765−212=1019
$\therefore$ Required answer = 1020

45. (1) $? = \frac{150\times150}{100} + 150$
=225+150=375

46. (3) ? = 51−34 + 21 = 38
$\therefore$ Required answer = 40

47. (4) The pattern of the number series is :
$11+2^2=11+4=15$
$15+4^2=15+16=31$
$31+6^2=31+36=67$
$67+8^2=67+64=131$
$131+10^2=131+100=231$

48. (1) The pattern of the number series is:
$483-1\times12 = 483-12 = 471$
$471-3\times12 = 471-36 = 435$
$435-5\times12 = 435-60 = 375$
$375-7\times12 = 375-84 = 291$
$291-9\times12 = 291-108 = 183$

49. (1) The pattern of the number series is :
$4+1\times7 = 11$
$11+2\times7 = 25$
$25+4\times7 = 53$
53+8×7=109
$109+16\times7 = 109+112 = 221$

50. (3) The pattern of the number series is :
$15+6\times1 = 21$
$21+6\times2 = 33$
$33+6\times3 = 51$
$51+6\times4 = 75$
$75+6\times5 = 105$

51. **(1) I.** 14x+7x=59+25
$\Rightarrow$ 21x = 84
$\Rightarrow$ $x=\frac{84}{21} = 4$
II. $\sqrt{y+222} = \sqrt{36} + \sqrt{81}$
$\Rightarrow$ $\sqrt{y+222} = 6+9 = 15$
$\therefore$ y+222=225
$\Rightarrow$ y=225−222 = 3
$Clearly, x > y$

52. (4) I. $144x^2 = 16+9=25$
$\Rightarrow$ $x^2 = \frac{25}{144}$
$\Rightarrow$ $x=\pm\frac{5}{12}$
II. $12y=\sqrt{49}-\sqrt{4} = +5$
$\Rightarrow$ $y=\frac{5}{12}$
$x\leq y$

53. (3) I. $x^2-9x+20 = 0$
$\Rightarrow$ $x^2-5x-4x+20 = 0$
$\Rightarrow$ $x(x-5)-4(x-5) = 0$
$\Rightarrow$ $(x-5)(x-4) = 0$
$\therefore$ x=5 or 4
II. $y^2-7y-6y+42 = 0$
$\Rightarrow$ $y(y-7)-6(y-7) = 0$
$\Rightarrow$ $(y-6)(y-7) = 0$
$\therefore$ y=6 or 7
$Clearly, x < y$

54. (5) I. $\frac{2\sqrt{x}+3\sqrt{x}}{10} = \frac{1}{\sqrt{x}}$
$\Rightarrow$ $5\sqrt{x}\times\sqrt{x} = 10$
$\Rightarrow$ 5x=10
$\Rightarrow$ x=2
II. $\frac{10-2}{\sqrt{y}} = 4\sqrt{y}$
$\Rightarrow$ 4y = 8
$\Rightarrow$ $y = \frac{8}{4} = 2$
$Clearly, x = y$

55. (2) From statement I, no equivalence relation among a woman, a boy and a man can be established.
From statement II
$M_1D_1 = M_2D_2$
$\Rightarrow$ $6\times16 = 5\times D_2$
$\Rightarrow$ $D_2 = \frac{6\times16}{5} = \frac{96}{5} = 19\frac{1}{5}$ days

56. (4) From both statements,
Rita = Sonu+5000
Sonu=Sonhan+8000
Two equation and three unknowns.
Hence, answer can't be determined.

57. (5) From statement I, and II,
Pravin's present age = 2x years
Shekhar's present age = 3 x years
$\therefore$ 3x=2x+6
$\Rightarrow$ x=6
Thus Pravin's age after 4 years
=2x +4=2×6+4

=16 years

58. (4) From both the statements, answer can't be determined.
Radius = Length of rectangle
Breadth of rectangle = 22 cms
We get no information about the length of rectangle.

59. (2) Required SP = $\frac{2400\times(100+25)}{(100-25)}$
$= \frac{(2400\times125)}{75} = Rs.4000$

60. (5) Let the number be x.
$\therefore \quad x+\frac{7}{9}\times\frac{35}{100}\times 900 = 325$
$\Rightarrow \quad x+245=325$
$\Rightarrow \quad x = 325-245 = 80$

61. (1) $x+4x+5x+60^o=360^o$
$\Rightarrow \quad 10x = 300^o$
$\Rightarrow \quad x = 30$
$\therefore$ Required difference = $5x-x$
$= 4x = 4\times 30 = 120^o$

62. (2) On dividing 1740 by 88, the remainder = 68
$\therefore$ Required number = 68

63. (3) Required ratio = 0.2 : 6
=2 : 60 = 1 : 30

64. (3) Required average
$=\frac{(1.4+1.5+2.2+1.3+5.5)\times100)}{5}$
$=\frac{1190}{5} = 238$

65. (1) Number of flights cancelled in Assam in 2007 = 270
Number of flights cancelled in Rajasthan in 2005, 2007 and 2008
$= (0.7+1.8+2.2)\times 100 = 470$
$\therefore$ Required difference
$= 470 - 270 = 200$

66. (5) from the table, we can see, continuously increasing trend is in West Bengal.

67. (5) Required ratio = 184 : 202 = 92 : 101

68. (2) It is river B.

69. (3)Required average water level of river A
$=\frac{196+205+230+212}{4} = \frac{843}{4} = 210.75$ m

70. (4) From the graph, we can say, level of River D in August is highest.

(71-75):

Number of boys $=\frac{800\times54}{100} = 432$
Mumbai $\Rightarrow$ $192-92 = 100$
Varanasi $\Rightarrow$ $\frac{432}{4} = 108$
Ajmer $\Rightarrow$ 101
Delhi $\Rightarrow$ $(432-309)\times\frac{2}{3} = 82$
Jodhpur $\Rightarrow$ $(432-309-82) = 41$
Number of girls = 800−432 = 368
Mumbai $\Rightarrow$ $\frac{1}{4}\times 368 = 92$
Delhi $\Rightarrow$ 92
Jodhpur $\Rightarrow$ 46
Ajmer $\Rightarrow$ $(368-230)\times\frac{5}{6} = 115$
Varanasi $\Rightarrow$ $368-230-115 = 23$

71. (3) Required ratio = 92 : 100 = 23 : 25

72. (2) Required average
$=\frac{82+108+41}{3} = \frac{231}{3} = 77$

73. (1)Required number of girls
$= (46+23)\times\frac{2}{3} = 46$

74. (5) Number of students who visited Jodhpur = 41+46=87
Required percentage
$= \frac{87}{115}\times 100 = 76\%$

75. (5) Number of students who visited Varanasi
= 108+23
= 131

76. **(d)** It is given that milk of
Ist quality = 403 gallons
IInd quality = 465 gallons
IIIrd quality = 496 gallons
Least number of bottles of equal size will be possible, when we have bottle having highest of largest size.
Largest size having highest or largest size. Largest size bottle can be found by finding **HCF of 403, 465 & 496.**
$403 = 13\times 31$
$465 = 15\times 31$
$496 = 16\times 31$
HCF = 31
Total numbers of gallon required =13+15+16 = 44 gallons.

77. (a) Let the number of candidates who passed= x.
Then, $39\times x + 15\times(120-x) = 120\times 35$
$\therefore 24x = 4200 - 1800$
Or, $x = \frac{2400}{24}, \Rightarrow x = 100.$

78. (a) Profit ratio of A, B and C is $(1200\times 12):(x\times 9):(y\times 6) = 2:3:5$
Taking first and second terms we get
$1200\times 12 : 9x = 2:3$
$1200\times 12\times 3 = 9x\times 2$
$\therefore x = \frac{1200\times12\times3}{18} = 2400$

79. (b) Let x kg ore is there
20% washed away so remaining is 80% i.e. $\frac{4}{5}x$
Out of $\frac{4}{5}x$, 25% is pure iron i.e. $\frac{1}{5}x$ now
$\because \frac{1}{5}x$ is obtained from x kg
Then 1 kg is obtained from 5 kg
$\therefore$ 80000 kg is obtained from $5\times 80000 = 400000$ kg

80. (b) Let C.P. be Rs. x
$900 - x = 2(x-450) \Rightarrow 3x = 1800 \Rightarrow x = 600$
C.P.$= Rs.600$, gain required$= 25\%$
$\therefore$ S.P.=Rs. $\left(\frac{125}{100}\times 600\right) = Rs.\ 750$