

APCOB Staff Assistant – Quantitative Aptitude (Solutions)

- 36. (d);** Required average = $\frac{450+420+450}{3} = 440$
- 37. (a);** Total male participated from school – B & D together = $540 + 560 = 1100$
Total female participated from school – A & C together = $450 + 500 = 950$
Required difference = $1100 - 950 = 150$
- 38. (d);** Total male participated from school – B & C together = $540 + 720 = 1260$
Total female participated from school – A & D together = $450 + 450 = 900$
Required % = $\frac{1260-900}{900} \times 100 = 40\%$
- 39. (b);** Total students participated from school F = $\frac{140}{100} \times 650 + 420 \times \frac{32}{21} = 910 + 640 = 1550$
- 40. (b);** Total number of male students participated from all the five schools = $(650 + 540 + 720 + 560 + 680) = 3150$
- 41. (b); Pattern of series -**
 $\boxed{? = 200}$ 100 150 375 1312.5
 $\times 0.5$ $\times 1.5$ $\times 2.5$ $\times 3.5$
- 42. (a); Pattern of series -**
 104 $\boxed{? = 112}$ 96 120 88 128
 +8 -16 +24 -32 +40
- 43. (d); Pattern of series -**
 15 8 9 15 32 $\boxed{? = 82.5}$
 $(\times 0.5+0.5)$ $(\times 1+1)$ $(\times 1.5+1.5)$ $(\times 2+2)$ $(\times 2.5+2.5)$
- 44. (e); Pattern of series -**
 6 8 14 26 46 $\boxed{? = 76}$
 +2 +6 +12 +20 +30
 +4 +6 +8 +10
- 45. (e); Pattern of series -**
 72000 $\boxed{36000}$ 12000 3000 600 ? = 100
 $\div 2$ $\div 3$ $\div 4$ $\div 5$ $\div 6$
- 46. (d);** let total work be 360 units
Efficiency of 1 man = $\frac{360}{12 \times 10} = 3$ units/day
Efficiency of 1 woman = $\frac{360}{10 \times 18} = 2$ units/day
Required time = $\frac{360}{4 \times 3 + 6 \times 2} = 15$ days
- 47. (a);** distance = 240 kms
Required speed = $\frac{240}{2.5} = 96$ kmph
Required % = $\frac{96-60}{60} \times 100 = 60\%$

- 48. (b);** Let 10 years ago, ages of Ram and Rahim were x years and $3x$ years, respectively.
Then, present age of Ram = $(x + 10)$
and present age of Rahim = $(3x + 10)$
According to the question,
 $\frac{x+10+5}{3x+10+5} = \frac{2}{3}$
 $\Rightarrow 3x + 45 = 6x + 30$
 $\Rightarrow 3x = 15$
 $\therefore x = 5$
Hence, required ratio = $\frac{5+10}{3 \times 5 + 10}$
 $= \frac{15}{25} = 3 : 5$
- 49. (b);** _____
- 50. (c);** let CP of book be Rs x
SP = Rs $1.2x$
New CP = Rs $0.9x$
New SP = Rs $1.2x + 90$
ATQ, $0.9x \times \frac{140}{100} = 1.2x + 90$
 $1.26x = 1.2x + 90$
 $x = \text{Rs } 1500$
- 51. (a);** I. $x = 5$
II. $y = 5$
So, $x=y$
- 52. (d);** I. $x^2 + 7x - 5x - 35 = 0$
 $x(x+7) - 5(x+7) = 0$
 $(x+7)(x-5) = 0$
 $x = -7, 5$
II. $y^2 + 7y + 8y + 56 = 0$
 $y(y+7) + 8(y+7) = 0$
 $(y+7)(y+8) = 0$
 $y = -8, -7$
So, $x \geq y$
- 53. (a)** I. $x = \pm 9$
II. $y = \pm 8$
So, no relation can be established
- 54. (a);** I. $17x^2 - 14x - 3 = 0$
 $17x^2 - 17x + 3x - 3 = 0$
 $17x(x-1) + 3(x-1) = 0$
 $(17x+3)(x-1) = 0$
 $x = -\frac{3}{17}, 1$
II. $y^2 - 2y - 35 = 0$
 $y^2 - 7y + 5y - 35 = 0$
 $y(y-7) + 5(y-7) = 0$
 $y = 7, -5$
So, no relation can be established

55. (e); I. $x^2 + 9x - 5x - 45 = 0$
 $x(x + 9) - 5(x + 9) = 0$
 $(x - 5)(x + 9) = 0$
 $x = 5, -9$

II. $y^2 - 5y - 8y + 40 = 0$
 $y(y - 5) - 8(y - 5) = 0$
 $(y - 5)(y - 8) = 0$
 $y = 5, 8$
 So, $x \leq y$

56. (e); let initial quantity of milk & water be $5x$ & $3x$ lit respectively
 ATQ, $\frac{5x+8}{3x} = \frac{11}{5}$
 $25x + 40 = 33x \Rightarrow x = 5$
 required difference = $5x - 3x = 2x = 10$ lit

57. (a); let rate of interest be $R\%$
 ATQ, $1200 = \frac{6000 \times R \times 2}{100}$
 $R = 10\%$
 Since compounding is done half-yearly, rate of interest = 5%
 Effective rate of interest = $5 + 5 + \frac{5 \times 5}{100} = 10.25\%$
 Required interest = $\frac{6000 \times 10.25 \times 1}{100} = \text{Rs } 615$

58. (b); let speed of boat in still water & speed of stream be $7x$ & $3x$ kmph respectively
 ATQ, $\frac{28}{7x+3x} = \frac{42}{60}$
 $x = 4$
 Required difference = $\frac{40}{7x-3x} - \frac{60}{7x+3x} = \frac{4}{x} = 1$ hour

59. (d); let amount invested by A be Rs x
 Profit ratio; A : B = $(x \times 12) : (17000 - x) \times 6 + (15500 - x) \times 6$
 $= 2x : (32500 - 2x)$
 ATQ, $\frac{19500}{32500 - 2x + 2x} \times (32500 - 2x) = 8100$
 $32500 - 2x = 13500$
 $x = \text{Rs } 9500$
 Required capital of B after 6 months = $15500 - x = \text{Rs } 6000$

60. (c); let length & breadth of rectangle be x & y m respectively
 ATQ, $1.4xy - xy = 24$
 $xy = 60$ (i)
 also, $2(x + y) = 32$
 $x + y = 16$ (ii)
 from (i) & (ii)
 $x = 10$ m, $y = 6$ m
 breadth of rectangle = 6 m

61. (d); $? = 170 - 35$
 $? = 135$

62. (a); $(12 + 13) \times 3 = \frac{?}{5}$
 $? = 375$

63. (c); $? = (3 \times 5) \times 8$
 $? = 120$

64. (b); $(\frac{120}{100} \times 750) \div ? = 25$
 $? = 900 \div 25$
 $? = 36$

65. (d); $? = (8 - 4 + 3) + \frac{6-10+7}{12}$
 $? = 7 \frac{1}{4}$

66. (e); $275 + \frac{64}{100} \times 750 = 750 + ?$
 $275 + 480 = 750 + ?$
 $? = 5$

67. (a); $? = 15 + 9 + 144$
 $? = 168$

68. (c); $\frac{510}{?} = 18 + 3.25$
 $? = 24$

69. (d); $\frac{12.5}{100} \times (120 + ?) = 45$
 $120 + ? = 360$
 $? = 240$

70. (c); $44 \times 12 - 16 = (8)^?$
 $528 - 16 = (8)^?$
 $? = 3$