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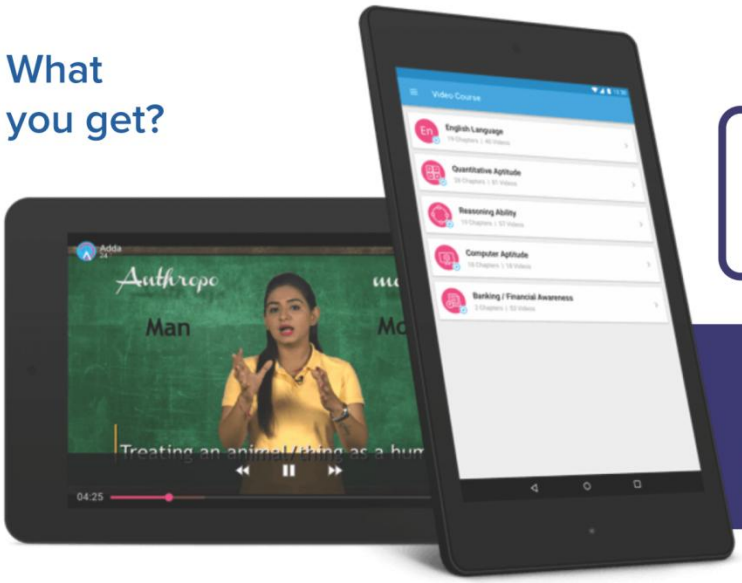


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## Solutions

**S1. Ans.(b)**

**Sol.** Required difference

$= \frac{1}{6} \times (14 + 18 + 23 + 21 + 27 + 26) - 15$

= 21.5 – 15

= 6.5 thousands

**S2. Ans.(e)**

**Sol.** Required ratio

= 18 : 15 : 9

= 6 : 5 : 3

**S3. Ans.(b)**

**Sol.** From graph the required year is 2006

**S4. Ans.(c)**

**Sol.** Required percentage

$= \frac{29}{35} \times 100$

$\simeq 83\%$

**S5. Ans.(a)**

**Sol.** Required percentage increase

$= \frac{27 - 18}{18} \times 100$

= 50%

**S6. Ans.(c)**

**Sol.** Required percentage

$= \frac{22 \times 250 - 24 \times 200}{24 \times 200} \times 100$

$\approx 15\%$

**S7. Ans.(b)**

**Sol.** Required difference

= (26 + 24) × 250 - (24 + 32) × 200

= 12,500 - 11,200

= 1,300

**S8. Ans.(c)**
**Sol.** Required ratio
$=\frac{(16+12)\times250}{(10+14)\times200}=\frac{35}{24}$

**S9. Ans.(a)**
**Sol.** Required average no. of boys
$=\frac{1}{3}\times(16+26+24)\times250$
$= 5{,}500$

**S10. Ans.(b)**
**Sol.** Required percentage
$=\frac{20\times200}{22\times250}\times100$
$\approx 73\%$

**S11. Ans.(e)**
**Sol.** Required percentage
$=\frac{(4600+5400)-(3600+4400)}{3600+4400}\times100$
$=\frac{10000-8000}{8000}\times100$
$=\frac{2000}{80}\%=25\%$

**S12. Ans.(b)**
**Sol.** Amount Satish spend on household and medicine $=\frac{7+2}{13}\times6500$
$=9\times500$
$=4500$

**S13. Ans.(a)**
**Sol.** Satish's average profit in Feb & March
$=\frac{4800+5500}{2}=5150$
Veer's average profit in Feb & March
$=\frac{2700+2400}{2}=2550$
Required difference = 5150 – 2550 = 2600

**S14. Ans.(c)**
**Sol.** Required Ratio
$=\frac{5500+6500}{2400+6000}$
$=\frac{12000}{8400}=\frac{10}{7}$

**S15. Ans.(c)**

**Sol.** Required percentage

$$= \frac{(3600 + \ 4800) - 5400}{5400} \times 100$$

$$= \frac{3000}{54}\%$$

$$= 55\frac{5}{9}\%$$



**S16. Ans.(a)**

**Sol.** Required average

$$= \frac{1}{6} \times (35 + 20 + 35 + 55 + 65 + 55)$$

$$= \frac{1}{6} \times 265$$

= 44.166 thousands

**S17. Ans.(c)**

**Sol.** Required percentage

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

= 20% less

**S18. Ans.(d)**

**Sol.** Required average no.

$$\frac{1}{3} \times (55 + 25 + 1.1 \times 25)$$

$$= \frac{1}{3} \times 107.5$$

= 35.83

≃ 36 thousands

**S19. Ans.(c)**

**Sol.** Required difference

= (35+ 20+ 35+55+ 65+ 55)- (15 + 25 + 40+ 60 + 45+ 25)

= 55,000

**S20. Ans.(b)**

**Sol.** From the graph it is clear that Wipro company has maximum employees in 2009.

**S21. Ans.(c)**

**Sol.** Total marks obtained by Ravi in Machine

= 75 + 100 + 110 + 120

= 405

**S22. Ans.(d)**

**Sol.** Required percentage

$$= \frac{(100 + 75 + 100 + 100 + 75)}{(150 + 100 + 150 + 150 + 100)} \times 100$$

$= 69.23\%$

$\simeq 69\%$

**S23. Ans.(e)**

**Sol.** Required percentage

$$= \frac{80}{120} \times 100$$

$$= 66\frac{2}{3}\%$$

**S24. Ans.(a)**

**Sol.** From table we can see that the required subject is Power Elex. and power system.

**S25. Ans.(e)**

**Sol.** Required percentage

$$= \frac{\frac{120}{150} \times 100 - 80}{80} \times 100$$

$= 0\%$

**S26. Ans.(c)**

**Sol.** Required no. of females

$$= \left(\frac{1}{5} \times 21{,}500 + \frac{5}{12} \times 27{,}300 + \frac{5}{16} \times 32{,}400\right)$$

$= 25{,}800$

**S27. Ans.(b)**

**Sol.** Required percentage

$$= \frac{\frac{7}{10} \times 24{,}500}{21{,}500} \times 100$$

$\simeq 80\%$

**S28. Ans.(d)**

**Sol.** Required average no.

$$= \frac{1}{3} \times \left(\frac{4}{5} \times 21{,}500 + \frac{7}{10} \times 24{,}500 + \frac{11}{16} \times 32{,}400\right)$$

$$= \frac{1}{3} \times (17{,}200 + 17{,}150 + 22{,}275)$$

$$= \frac{1}{3} \times 56{,}625$$

$= 18{,}875$

**S29. Ans.(a)**

**Sol.** Required difference

$= \left|\frac{13}{20} \times 30{,}200 - \frac{5}{11} \times 35{,}200\right|$

$= |19{,}630 - 16{,}000|$

$= 3{,}630$

**S30. Ans.(b)**

**Sol.** No. of male candidates who qualified the exam in year 2008

$= \frac{7}{12} \times 27{,}300$

$= 15{,}925$

No. of male candidates who qualified the exam in 2011

$= \frac{6}{11} \times 35{,}200$

$= 19{,}200$

∴ Required percentage

$= \frac{19{,}200 - 15{,}925}{19{,}200} \times 100 \simeq 17\%$ less

**S31. Ans.(b)**

**Sol.** Required average $= \frac{1}{3} \times (4 \times 13 + 3 \times 15.5 + 12 \times 6)$

$= 56.833$

$\simeq$ 57 lakhs (approx)

**S32. Ans.(c)**

**Sol.** Required percentage $= \frac{1}{2} \times 100$

$= 50\%$ more

**S33. Ans.(d)**

**Sol.** No. of women in year 2000

$= \frac{4}{11} \times 143 = 52$ lakh

In year 2001 $= \frac{2}{5} \times 145 = 58$ lakh

In year 2002 $= \frac{3}{8} \times 124 = 46.5$ lakh

In year 2003 $= \frac{8}{17} \times 136 = 64$ lakh

In year 2004 $= \frac{12}{25} \times 150 = 72$ lakh

∴ No. of women is min. in year 2002.

**S34. Ans.(a)**

**Sol.** Required difference = (3 × 29 + 9 × 8) – (13 × 4 + 12 × 6)

= 159 – 124

= 35 lakhs

**S35. Ans.(d)**

**Sol.** Required percentage = $\frac{5 \times 15.5}{8 \times 8} \times 100$

= 121.09%

≃ 121% (approximately)

S36. Ans.(c)

Sol.

Required percentage

$= \frac{22 \times 250 - 24 \times 200}{24 \times 200} \times 100$

$\approx 15\%$

**S37. Ans.(b)**

**Sol.** Required difference

= (26 + 24) × 250 - (24 + 32) × 200

= 12,500 - 11,200

= 1,300

**S38. Ans.(c)**

**Sol.**Required ratio

$= \frac{(16+12) \times 250}{(10+14) \times 200} = \frac{35}{24}$

**S39. Ans.(a)**

**Sol.** Required average no. of boys

$= \frac{1}{3} \times (16+26+24) \times 250$

= 5,500

**S40. Ans.(b)**

**Sol.** Required percentage

$= \frac{20 \times 200}{22 \times 250} \times 100$

$\approx 73\%$

**S41. Ans.(e)**

**Sol.** Total no. of male students learning Indian Classical in schools P and S together

$= \frac{5}{8} \times \frac{40}{100} \times 400 + \frac{3}{4} \times \frac{16}{100} \times 375$

= 145

And total female students learning Indian Classical in same schools together

$= \frac{3}{8} \times \frac{40}{100} \times 400 + \frac{1}{4} \times \frac{16}{100} \times 375$

= 75

$\therefore$ Required ratio $= \frac{145}{75}$

$= \frac{29}{15}$

**S42. Ans.(d)**

**Sol.** Total students who are below 17 years from Q

$= \frac{1}{9} \times \frac{24}{100} \times 225$

= 6

$\therefore$ Females who are below 17 years

$= \frac{1}{2} \times 6 = 3$

$\therefore$ Required no. of females ($\geq$ 17 years) = 18-3=15

**S43. Ans.(c)**

**Sol.** Required difference

$= \frac{1}{3} \times \frac{24}{100} \times 225 + \frac{3}{5} \times \frac{20}{100} \times 525$

= 18 + 63

= 81

**S44. Ans.(b)**

**Sol.** Required average

$= \frac{1}{3} \times \left( \frac{60}{100} \times 400 + \frac{76}{100} \times 225 + \frac{80}{100} \times 525 \right)$

$= \frac{1}{3} \times (240 + 171 + 420)$

= 277

**S45. Ans.(d)**

**Sol.** Total students in Q and S together

$= \frac{24}{100} \times 225 + \frac{16}{100} \times 375$

= 114

Total students in P and R together

$= \frac{40}{100} \times 400 + \frac{20}{100} \times 525$

= 265

∴ Required percentage

$\frac{265-114}{265} \times 100$

$\simeq 57\%$

**S46. Ans.(d)**

**Sol.** Total profit on Grapes = 80 + 65 + 75 = 220

Total profit on Mango = 40 + 35 + 35 = 110

Required percentage $= \frac{220-110}{110} \times 100 = 100\%$

**S47. Ans.(c)**

**Sol.** Profit earned by X = 20 + 40 + 55 + 80 + 60 = 255

Profit earned by Z = 35 + 35 + 60 + 75 + 60 = 265

Required Ratio $= \frac{255}{265} = \frac{51}{53}$

**S48. Ans.(a)**

**Sol.** Profit earned by X = 6 × 55 = 330

Profit earned by Z = 240

Required percentage $= \frac{330-240}{240} \times 100 = 37.5\%$

**S49. Ans.(e)**

**Sol.** S.P. per kg of Grape $= \frac{600}{5}$ = Rs. 120

C.P. of Grape = S.P. – Profit

= 120 – 65

= Rs. 55/kg

**S50. Ans.(c)**

**Sol.** 25% of CP of apple = 75

100% of CP of apple = 300

14% of CP of mango = 35

100% of CP of mango = 250

Total CP of per kg Apple and per kg Mango = 300 + 250 = 550

**S51. Ans.(c)**

**Sol.** Required difference

$= \frac{(17 + 24) - (18 + 16)}{100} \times 33000$

= (41- 34) × 330

= 2310

**S52. Ans.(e)**

**Sol.** Required difference

$= \frac{[43 - (100 - 34 - 43)]}{100} \times \frac{17}{100} \times 33000$

$= \frac{20}{100} \times \frac{17}{100} \times 33000$

= 1122

**S53. Ans.(a)**

**Sol.** Required percentage

$= \frac{(12 + 17 - 16)}{16} \times 100$

$= \frac{13}{16} \times 100$

= 81.25%

**S54. Ans.(b)**

**Sol.** Average population of A, C & Y $= \frac{18+16+17}{3}$

= 17%

Average population of B & X $= \frac{24+12}{2}$

= 18%

Required difference

$= \frac{(18 - 17)}{100} \times 33000$

= 330

**S55. Ans.(d)**

**Sol.** Population of city C not doing govt. Job

$= \frac{(40 + 30)}{100} \times \frac{16}{100} \times 33000$

$= \frac{70}{100} \times \frac{16}{100} \times 33000$

= 3696

**S56. Ans.(c)**

**Sol.** Population of city Y $= \frac{3000}{0.15}$

$= 20{,}000$

Population city of Z $= \frac{8000}{0.5} = 16{,}000$

Required percentage $= \frac{20{,}000-16{,}000}{20{,}000} \times 100$

$= \frac{4000}{20{,}000} \times 100$

$= 20\%$

**S57. Ans.(e)**

**Sol.** Required difference

$= \frac{(11-7)}{18} \times 0.45 \times \frac{3600}{0.3}$

$= 1200$

**S58. Ans.(b)**

**Sol.** Female population is city Z $= \frac{8000}{0.5} \times 0.35$

$= 5600$

Male & transgender population in city A $= \frac{3600}{0.3} \times [0.7]$

$= 8400$

Required percentage

$= \frac{8400-5600}{8400} \times 100$

$= \frac{2800}{84}\% = \frac{100}{3}\%$

$= 33\frac{1}{3}\%$

**S59. Ans.(d)**

**Sol.** Male population in city B $= \frac{4200}{0.3} \times 0.38$

$= 5320$

Female population in city X $= \frac{2000}{0.25} \times 0.3$

$= 2400$

Required difference = 5320 – 2400

$= 2920$

**S60. Ans.(a)**

**Sol** Required ratio

$= \frac{\frac{8000}{0.5} \times 0.15}{\frac{3600}{0.3} \times 0.25}$

$= \frac{2400}{3000} = \frac{4}{5}$

**S61. Ans.(b)**
**Sol.** Required percent $= \frac{90}{360} \times 100 = 25\%$

**S62. Ans.(a)**
**Sol.** 100 marks is equivalent to $\frac{100}{450} \times 360 = 80°$
$\therefore$ 80° is central angle for Maths.

**S63. Ans.(c)**
**Sol.** Difference in central angle $= 160 - 120 = 40°$
$\therefore$ Required marks $= \frac{40}{360} \times 450 = 50$ marks

**S64. Ans.(b)**
**Sol.** Required aggregate marks $= \frac{450}{5} = 90$ marks.

**S65. Ans.(c)**
**Sol.** Central angle for 22.2% $= \frac{22.2}{100} \times 360 \approx 80°$
80° resemble Maths.

**S66. Ans.(e)**
**Sol.** Required% $= \frac{(20{,}000-9{,}600)}{9600} \times 100$
= 108.32
$\approx$ 108%

**S67. Ans.(d)**
**Sol.** Required angle $= \frac{20}{100} \times 360 = 72^0$

**S68. Ans.(c)**
**Sol.** Required average number $= \frac{10560+12320+6880}{3}$
$= \frac{29760}{3} = 9920$

**S69. Ans.(a)**
**Sol.** Required difference $= (10560 + 10240) - 17600$
= 3200

**S70. Ans.(b)**
**Sol.** Required % $= \frac{12{,}320}{16{,}000} \times 100 = 77\%$

**S71. Ans.(d)**
**Sol.** Required difference $= \frac{150}{100} \times (1680) - \frac{75}{100} \times (780)$
$= 2520 - 585$
= 1935

**S72. Ans.(c)**

**Sol.** Required percentage $= \frac{(3531-419)}{419} \times 100$

$= 742.72\%$

**S73. Ans.(b)**

**Sol.** Required ratio $= \frac{\frac{1}{2}(640+780)}{\frac{1}{2}(1230+870)}$

$= \frac{1420}{2100}$

$= 71 : 105$

**S74. Ans.(e)**

**Sol.** Required value $= 500 \times (8297) + 1000 \times (5182)$

$= 4148500 + 5182000$

$= 9330500$

**S75. Ans.(a)**

**Sol.** Let old 1000 Rs. deposited on Tuesday in IDBI Bank = $x$

$\therefore \frac{1111}{x} = \frac{1}{2}$

$x = 2222$

$\therefore$ Required old 500 Rs. note deposited $= (1578 + 1111) - 2222$

$= 467$

**S76. Ans.(c)**

**Sol.** Total number of students in class XII$^{th}$

$= \frac{30}{50} \times 100 + \frac{81}{54} \times 100$

$= 60 + 150$

$= 210$

**S77. Ans.(d)**

**Sol.**

$\frac{55\% \text{ of girls}}{40\% \text{ of boys}} = \frac{5}{4}$

$\therefore$ Required ratio $= \frac{\text{boys}}{\text{girls}} = \frac{11}{10}$

**S78. Ans.(b)**

**Sol.**

Number of boys $= \frac{12}{25} \times 250 = 120$

Number of girls $= \frac{13}{25} \times 250 = 130$

$\therefore$ Required difference $= \left|\frac{60}{100} \times 130 - \frac{55}{100} \times 120\right| = 78 - 66 = 12$

**S79. Ans.(c)**

**Sol.** Let total number of girls be G.

$\therefore 0.5G + 0.6\,(300 - G) = 160$

$\Rightarrow 0.5G + 180 - 0.6G = 160$

$\Rightarrow G = 200$

**S80. Ans.(a)**

**Sol.** Required average $= \frac{1}{5}(60 + 50 + 55 + 45 + 60) \times \frac{150}{100} = \frac{1}{5} \times 270 \times \frac{150}{100} = 81$

**S81. Ans.(b)**

**Sol.** Required average

$= \frac{1}{5} \times (35 + 40 + 50 + 60 + 70) \times 1000$

$= 51{,}000$

**S82. Ans.(c)**

**Sol.** Total boys who were died in state Jharkhand in years 2005 and 2003 together

$= \frac{5}{8} \times (40 + 60) \times 1000$

$= 62{,}500$

$\therefore$ Required percentage $= \frac{62{,}500}{1{,}00{,}000} \times 100$

$= 62.5\%$

**S83. Ans.(a)**

**Sol.** No. Of children who were died in Assam in 2002 and 2004 together

= 55000 + 45000

= 1,00,000

And in 2003 and 2005 together = (50,000+35,000)

= 85000

$\therefore$ Required percentage $= \frac{15{,}000}{85{,}000} \times 100$

$\approx 18\%$ more

**S84. Ans.(b)**

**Sol.** Required average $= \frac{1}{2} \times (190 - 85) \times 1000$

= 52,500

**S85. Ans.(d)**

**Sol.** $\therefore$ Required percentage $= \frac{7-4}{7} \times 100$

$= 42.86\%$

**S86. Ans.(c)**

**Sol.** Required number of male foreigners toured of Goa and MP together

$= \frac{11}{12} \times \frac{28}{100} \times 1800 + \frac{5}{9} \times \frac{23}{100} \times 1800$

$= 462 + 230$

$= 692$

**S87. Ans.(e)**

**Sol.** Required percentage of female foreigners

$= \frac{\left(\frac{4}{9} \times \frac{23}{100} \times 1800\right)}{1800} \times 100$

$\simeq 10\%$

**S88. Ans.(c)**

**Sol.** Number of female foreigners who toured of Uttarakhand and Jammu & Kashmir together

$= \frac{3}{4} \times 1800 \times \frac{14}{100} + \frac{7}{9} \times \frac{17}{100} \times 1800$

$= (189+238)$

$= 427$

And, Total no. of foreigners who toured of these states

$= \frac{14}{100} \times 1800 + \frac{17}{100} \times 1800$

$= 558$

$\therefore$ Required ratio $= \frac{427}{558}$

**S89. Ans.(c)**

**Sol.** Required average $= \frac{1}{5}\left(\frac{11}{12} \times 28 + \frac{1}{4} \times 14 + \frac{5}{9} \times 23 + \frac{7}{12} \times 18 + \frac{2}{9}17\right) \times 18$

$= \frac{1}{5}(462 + 63 + 230 + 189 + 68)$

$= 202.4 \simeq 202$

**S90. Ans.(b)**

**Sol.** Male foreigners who toured Goa

$= \frac{11}{12} \times 1800 \times \frac{28}{100}$

$= 462$

Total foreigners who toured Goa

$= \frac{28}{100} \times 1800$

$= 504$

$\therefore$ Required percentage $= \frac{462}{504} \times 100 = 91.67\%$

**S91. Ans.(c)**

**Sol.** Required percentage = $\frac{300}{225} \times 100$

$\simeq 133\%$

**S92. Ans.(c)**

**Sol.**

Required average

$= \frac{1}{5} \times (175 + 225 + 300 + 275 + 375)$

$= \frac{1}{5} \times 1350$

= 270 tonnes

**S93. Ans.(d)**

**Sol.**

Required percentage

$= \frac{(275 + 400)}{(275 + 225)} \times 100$

= 135%

**S94. Ans.(a)**

**Sol.**

Required difference

= (225 + 275 + 250 + 275 + 400) – (175 + 225 + 300 + 275 + 375)

= 75 tonnes

**S95. Ans.(b)**

**Sol.**

Required ratio

$= \frac{(150 + 200 + 275)}{(175 + 225 + 300)}$

$= \frac{625}{700} = \frac{25}{28}$

**S96. Ans.(b)**

**Sol.**

Required average

$= \frac{1}{5} \times (20 + 25 + 35 + 30 + 45)$

= 31 thousands

**S97. Ans.(c)**

**Sol.** Required difference

$|(15 + 20 + 30 + 35 + 40) - (10 + 20 + 25 + 40 + 50)|$

$= 5000$

**S98. Ans.(a)**

**Sol.** Required percentage

$= \frac{35 - 30}{35} \times 100$

$= 14\frac{2}{7}\%$ less

**S99. Ans.(d)**

**Sol.** Required ratio

$= \frac{(20 + 35)}{(10 + 25)} = \frac{11}{7}$

**S100. Ans.(a)**

**Sol.** From the graph it is clear that person B gets maximum income in 2005