Percentage	
Q.No	Answer
Type I-Basic	
1	**Option D** **Solution:** 250/7% of 6510 + 700/9 % of 5886 =?% of 6126 + 50% of 5638 2325 + 4578 – 2819 = x/100 *6126 +2819 (4084 *100) /6126 = x X=66.66
2	**Option A**
3	**Option E** **Explanation:** 602 – 90 – 378 = 134
4	**D. 20%** **Explanation:** Percentage decrease = 25/125 * 100 = 20%
5	Correct Option: D Let the number be x. Then, $\frac{3}{5}x$ – (45% of x) = 30 $\Rightarrow \frac{3}{5}x - \frac{45}{100}x = 30.$ $\Rightarrow 15x = 3000 \Rightarrow x = 200.$ Hence, option (D) is correct.
6	Correct Option: C Let the original fraction be $\frac{x}{y}$. Then, $\frac{115\% \text{ of } x}{92\% \text{ of } y} = \frac{15}{16} \Rightarrow \frac{115x}{92y} = \frac{15}{16}$ $\Rightarrow \frac{x}{y} = (\frac{15}{16} \times \frac{92}{115}) = \frac{3}{4}.$ Hence, option (C) is correct.
7	D Let the number = N ⇒ 0.72N – 0.56N = 56 ⇒ N = 350 ∴ required number = 0.7 × 350 = 245
8	Correct Option: E Let the number be x Then, 35% of x = 175 or, $\frac{35}{100} \times x = 175$ $\therefore \quad x = \frac{175 \times 100}{35} = 500$ Now, let y% of 175 = 500 then, $\frac{y}{100} \times 175 = 500$ $\therefore \quad y = \frac{500 \times 100}{175} = \frac{2000}{7} = 285.71\%$ Hence, option (E) is correct.

9	Correct Option: A Hydrogen in 350 g water = $14\frac{2}{7}\% \times 350 = \frac{100 \times 350}{7 \times 100} = 50g$ Now, the oxygen in 350 g water = 350g – 50g = 300 g. Hence, option (A) is correct.
10	Correct Option: C % change in the 1st case = 20% increase = 20% (+) % change in 2nd case = 25% decrease = 25% (–) Applying the net% effect formula, Net% effect = $x + y + \frac{xy}{100}\%$ $= 20 - 25 - \frac{20 \times 25}{100} = -5 - 5 = -10\%$ Therefore, the resultant % will be 10% less than the base income. Hence, option (C) is correct.
Type II-Income and expenditure	
1	**B)20,000** Explanation : 10+15+10 = 35% 100-35 = 65% = 13,000 100% = 100*13000/65 = 20,000
2	**B) 50000** **Explanation :** Let monthly income is P (70/100)*P*(40/100)*5/7 = 10000 P = 50000
3	**a) 5%** **Solution:** Initially I-E = S (I = Income, E = expenditure, S = saving) 10000-6000 = 4000(saving) Now, I = 11000 and E = 7200. So saving = I – E = 3800. [(4000-3800)/4000]*100 = 5%
4	Correct Option: D According to question, we get $\Rightarrow \frac{(25\% \text{ of } 4.32 \text{ lac} \times 8)}{12}$ $\Rightarrow \frac{25 \times 432000 \times 8}{12 \times 100} = 72000/-$ Hence, option (D) is correct
5	Correct Option: C Let the total amount be ₹ x Total expenditure = (23 + 33 + 19 + 16)% = 91% Remaining money = (100 – 91)% % of x = 504 ⇒ 9% of x = 504 $\Rightarrow x = \frac{504 \times 100}{9} = \text{Rs. } 5600$ Now, total money (food + insurance)% = (23 + 33)% of x = 56% of x = 56% of 5600 = Rs. 3136. Hence. option (C) is correct.
6	Correct Option: C Let income be 100. ∴ Income after spending 40% on food items = 100 – 40 = 60 ∴ Income after spending 50% of the remaining = 50% of 60 = 30 Savings = $\frac{1}{3} \times 30 = 10$ Now, 10 : 100 : : 19200 : x

	∴ yearly income = $\frac{100 \times 19200}{10}$ = 192000 ∴ Monthly income = $\frac{192000}{12}$ = 16000 Hence, option (C) is correct.
	Type III- Election
1	**Ans C:-** $(60\% - 40\%) = 20\%$ of votes $= 14000.$ $60\% = \frac{14000}{20} \times 60 = 42000$ No. of votes obtained by the winning candidate = 42000
2	Answer – **c) 100000** **Explanation :** 12% percent didn't cast their vote. 45% of total votes get by the winning candidates, so remaining 43% will be scored by his rival. So, (45/100 -43/100)*P = 2000 P = 100000
3	**Ans-B** Let no. of voters $= x$ $\therefore \frac{47x}{100} - \left[\frac{90x}{100} - 60 - \frac{47x}{100}\right] = 308$ $\therefore x = 6200$
4	Correct Option: C Let the votes received by A be x & B be y. Now as per the given statements, x – y = 400 **.....(1)** Also $(\frac{87.5}{100})x = y + (\frac{12.5}{100})x$ **...(2)** (The votes lost by A would go into B's account) solving (2), we get y = $(\frac{3}{4})x$ **....(3)** Using (3) to solve (1) we get x – $(\frac{3}{4})x = 400$ x = 1600 And, y = 1200 Now, we know that A & B collectively won 70% of total votes. If the total number of registered voters in the village be Z, Then, $(\frac{70}{100})Z = 1600 + 1200 = 2800$ Z = 4000 Hence, option C is correct.
5	Answer – **d) 660** **Solution:** Ratio b/w winner and loser 5:1 Total no of votes casted actually = 1000*(88/100)*(90/100) = 792 5x + x = 792, X =132 Votes of winner candidate = 5*132 = 660
6	**Ans D**

	Let total votes be $6x$ People who took part in survey = $83\frac{1}{3}\% \times 6x = 5x$ $2.5x$ claims to vote for A, $0.5x$ are uncertain. People who didn't took part in survey = $6x - 5x = x$ And vote for A= $\frac{2}{3} \times x = \frac{2}{3}x$ Vote for A, from people who are uncertain. $= \frac{1}{5} \times 0.5x = 0.1x$ Total votes for A = $2.5x + 0.1x + \frac{2}{3}x$ $= \frac{25}{10}x + \frac{1}{10}x + \frac{20}{30}x$ $= \frac{75x+3x+20x}{30}$ $= \frac{98x}{30}$ Votes for B = $6x - \frac{98x}{30} = \frac{82x}{30}$ ATQ, $\frac{98x}{30} - \frac{82x}{30} = \frac{16x}{30}$ $\frac{16x}{30} = 640$ $\Rightarrow x = 40 \times 30 = 1200$ Hence total votes are $6 \times 1200 = 7200$
Type IV – Exam and Marks	
1	Correct Option: C Let's maximum aggregate marks = x 203 + 12% of x = 290 12% of x = 290 – 203 $\Rightarrow$ x = $\frac{87 \times 100}{12}$ = 725. Hence, option (C) is correct.
2	Correct Option: A Let the total number of questions be x. then, 10 ≡ 40% x ≡ 100% By the cross multiplication, we get x = $\frac{100 \times 10}{40}$ = 25. Hence, option (A) is correct.
3	Correct Option: B Let the maximum marks be x. Putting the given info in th eq. form, we get pass marks = (20% of x) + 10 = (42% of x) – (12% of x) $\Rightarrow$ (20% of x) + 10 = (30% of x) $\Rightarrow$ (30% of x) – (20% of x) = 10 $\Rightarrow$ 10% of x = 10 $\therefore$ x = 100 marks Hence, option (B) is correct.
4	Correct Option: E Total maximum marks = 100 + 120 + 150 = 370 Total marks in History and English = 95 + 80 = 175 Total marks required by her to get 70% = 370 × 70% = 259 So, she needs 259 – 175 = 84 marks to score 70%. Hence, option E is correct.
5	**e) None of these Explanation :** (30/100)*T = P -10 (40/100)*T = P + 15 U will get P = 85
Type V – Chain Rule	
1	Correct Option: B **Method I :** Let D got 100 marks. C got 25% marks more than D. $\therefore$ Marks obtained by C = 125 B got 10% marks less than C. $\therefore$ Marks obtained by B = $125 \times \frac{90}{100}$ A got 25% marks more than B.

	Marks obtained by A = $125 \times \frac{90}{100} \times \frac{125}{100} = \frac{1125}{8}$ Now, $100 : \frac{1125}{8} :: 320 : x$ $\Rightarrow x = \frac{1125 \times 320}{8 \times 100} = 450$
2	Answer – C) 23 Explanation : A = 125/100 of B => B =4/5 A B = 140/100 of C => C = 5/7 B C = 160/100 0f D => D = 5/8 C B = (4/5) × 320 = 256 C = (5/7) × 256 = 183 D = (5/8) × 183 = 114 D percentage = (114/500) × 100 = 23%
3	E) None of these Explanation: Let C's monthly salary = Rs 100, then B's = (100-20)% of 100 = 80, and A's monthly = (100+30)% * 80 = 104 If difference between A and C's monthly salary is Rs 4 then B's monthly salary is Rs 80 So if difference is Rs 800, B's monthly salary is (80/4) * 800 = 16,000 So annual salary = 12*16,000
Type VI – Percentage Change	
1	Correct Option: D Net percentage change = $20 - 25 - \frac{25 \times 20}{100}$ $= 20 - 25 - 5 = -10\%$ Hence, option (D) is correct.
2	**b) 10% Solution:** Take 100 as rishi salary. Increased by 20% percent = 120. Then decreased by 25%, i.e = (75/100)*120 = 90. So percentage decrease is 10%.
3	**Ans: A) 12%** **Solution:**Original revenue=100×100=10000. After 20% decrease=80×140=11200. Hence [(11200-10000)/10000] ×100=[1200/10000] ×100 =12%.
4	B) 33.33%
5	**C)20.8%** Explanation : % = -12 -10 + (-12*-10)/100 = (-2200 + 120)/100 = – 2080/100 = -20.8%
6	**C)20.8%** Explanation : % = -12 -10 + (-12*-10)/100 = (-2200 + 120)/100 = – 2080/100 = -20.8%
7	**c) 17820 Explanation :** 15000*(11/10)*(12/10)*(9/10) = 17820
8	**A) 1,77,366 Explanation:** New population = 1,60,000 [(1 + (3/100)] [(1 + (2.5/100)] [(1 + (5/100)]
Type VII - Consumption	
1	**Answer** **A)13%** Formula : x*100/x+100 Explanation :Reduction % = 15*100/100+15 = 1500/11513.04 = 13%
2	Answer – **c) 300/13 Solution:** If commodity price is increased then reduction in consumption will be [(increase in price)/100 + increase in price]*100. (30/130)*100 = 300/13%
3	**Answer:** B) 20 **Explanation:** Let original consumption = 100 kg and new consumption = x kg, So, 100 * 6 = x * 7.50 => x = 80kg Reduction in consumption = 20%.
4	**2.35.2 Explanation :** Suppose initially price per kg of rice is 100 then their expenditure is 4000. Now their expenditure is only increased by only 10% i.e – 4400. Increased price of rice = 125. So new consumption = 4400/125 = 35.2
5	Answer – **d) 46kg Explanation :** Suppose initially price per kg of rice is 100 then their expenditure is 5000. Now their expenditure is only increased by only 20% i.e – 6000. Increased price of rice = 130. So new consumption = 6000/130 = 46
Type VIII –Overlapping Sets	

1	Answer – **2.33 Explanation :** Total students=60 Failed in both=5% of 60=3 Passed in both=20% of 60=12 Passed in reasoning=50% of 60=24 Those passed only in reasoning =24-12=12 students. Passed only in Quants=60-(12+12+3)=33
2	Answer – **1.37% Explanation :** Students passed in Prelims = 70% Students passed in Mains = 55% Students passed in both = 62% No of students passed in at least one subject = (70+55)-62 = 63%. students failed in both subjects = 100-63 = 37%.
3	**B) 1175 Explanation:** Failed in 1st subject = (35/100) * 2500 = 875 Failed in 1st subject = (42/100) * 2500 = 1050 Failed in both = (15/100) * 2500 = 375 So failed in 1st subject only = 875 – 375 = 500 failed in 2nd subject only = 1050 – 375 = 675 passed in 1st only + passed In 2nd only = 675+500
Type IX- Mixture based	
1	Answer – **d) 15 Explanation :** alcohol = 30*2/5 = 12 and water = 18 litres (12 + x)/(30 +x) = 60/100, we will get x = 15
2	Answer – **b) 30ltr Explanation :** Let initial quantity is x litre final, salt = (x/10)/ (x – 15) = 20/100
3	**Answer:** A) 10 kg **Explanation:** Let the original quantity be x kg. Vanaspati ghee in x kg = (40x / 100)kg = (2x / 5) kg. Now, (2x/5)/(x + 10) = 20/100 => 2x / (5x + 50) = 1/5 => 5x = 50 => x = 10.
4	Correct Option: D To solve this question, we can apply a short trick approach; Required litres of water = $\frac{A\{(100 – x) – (100 – y)\}}{(100 – y)}$ **Where,** A is the quantity of mixture = 30 ltrs x is the initial percent of water = 20% y is required percent of water = 60% By the short trick approach, we get = $\frac{30\{(100 – 20) – (100 – 60)\}}{(100 – 60)}$ = $\frac{30 \times (80 – 40)}{40}$ = 30 litres. Hence, option (D) is correct.
5	**Answer:** B) 12.8 lit **Explanation:** This can be solved as $20\left(1-\frac{4}{20}\right)^2 = 20\left(1-\frac{1}{5}\right)^2$ $= 20\left(\frac{4}{5}\right)^2$ $= 20\left(\frac{16}{25}\right)$ $= \frac{64}{5}$ $= 12.8$
Type X- Miscellaneous	
1	Answer: A) 21.6 % Explanation: Total money = Rs.[600*(25/100)+1200*(50/100)]= Rs. 750. 25 paise coins removed = Rs. (600*12/100) = 72. 50 paise coins removed = Rs. (1200*24/100)= 288. Money removed =Rs.(72*25/100+288*50/100) = Rs.162. Required percentage = (162/750*100)% = 21.6 %.
2	Answer: A) 32.5 %

	Explanation: Number of males = 60% of 1000 = 600. Number of females = (1000 - 600) = 400. Number of literates = 25% of 1000 = 250. Number of literate males = 20% of 600 = 120. Number of literate females = (250 - 120) = 130. Required percentage = (130/400 * 100) % = 32.5 %.
3	Answer: A) 324138 Explanation: Total Population = 728400 Migrants = 35 % of 728400 = 254940 local population = (728400 - 254940) = 473460. Rural migrants = 20% of 254940 = 50988 Urban migrants = (254940 - 50988) = 203952 Female population = 48% of 473460 + 30% of 50988 + 40% of 203952 = 324138
4	**Answer:** A) -99% **Explanation:** By mistake = x/10 Actual value = x * 10 % Change = $\frac{10x-\frac{x}{10}}{10x} \times 100 = \frac{99}{100} \times 100$ = 99% (negative) Since actual value is greater than the wrong value.
5	**Answer:** C) 84% **Explanation:** Let the number be 'x' Then, according to the given data, $\frac{\frac{5}{2}x-\frac{2}{5}x}{\frac{5}{2}x}x100$ = $\frac{21}{25}x100$ = 84%
6	**Answer:** B) -2 **Explanation:** $2000x\frac{X}{100} + 4000x\frac{Y}{100} = 320$ and $2000x\frac{X}{100} + 10000x\frac{Y}{100} = 680$ x = 4 and y = 6 x-y = -2
7	Answer – **c) 48 Explanation :** let original price is x rupees per kg 1200/(4x/5) – 1200/x = 5 We will get x = 60, so reduced price = (4*60)/5 = 48
8	Answer: A) Rs. 20 Explanation: Let the original price of rice be Rs. x

	Let rice a man can buy for Rs. 500 at rs. x/kg be = R kgs From given data, for Rs. 500 x ---- R kgs (x + 25x/100) ---- (R - 5) kgs => Rx = (R - 5)(x + 25x/100) => Rx = (R - 5)(125x/100) => 100Rx = 125Rx - 625x => R = 25 So at rate of Rs. x/kg, man get 25 kgs for Rs. 500 => x = 500/25 = Rs. 20
9	**B. Rs.104** **Explanation:** 1.08x = 1404 x = 1300 The reduction of the price of the watch = 104
10	**E. 89.2.** **Explanation:** Initially 'x' kg of iron in 500 kg ore. Iron in the 200 kg of removed =200*12.5/100= 25 kg. The percentage of iron in the remaining ore was found to be 20% more than the percentage in the original ore So (x-25)/300 = (120/100)*x/500 => x – 25 = 18x/25 => 7x = 625 => x = 89.2
11	**D.960kg** **Explanation :** Quantity of water in 300 kg dry fruits, = (20 /100) *300 = 60 kg Quantity of fruit alone= 300-60 =240 kg 25 kg fruit piece in 100 kg fresh fruits For 240 = (100 *240)/25 = 960 kg.
12	**B. 40%** **Explanation:** Assume Deepak's salary =10000 original hike(50%) amount = 5000 ; Revised salary =15000 Wrongly typed(80%) hike amount = 8000 Diff = 3000; For three months = 9000 Fourth Month Salary = 15000-9000=6000 15000*x/100 = 6000 => x=40%
13	Correct Option: C Let Prena's salary be Rs x. Now, according to the question, 90% of 15% of x = 2896 $\therefore x = \frac{2896}{0.9 \times 0.15} R \approx 21450$ Hence, option (C) is correct.
14	Correct Option: C 5/6 corresponds to 83.33%. Hence, the amount that he kept with him corresponds to 100 − (83.33 + 5 + 10) = 1.67% of the total amount with him. This corresponds to Rs. 850 Also, because he placed 10% in debentures and he got 10% interest, amount obtained in interest = 10% of 10% of amount with him i.e. 1% of the amount with him. $\therefore$ Interest earned = $\frac{(850 \times 1)}{1.67} = 850 \times \frac{3}{5} = 510$ Hence, option C is correct.
15	Answer: A) Quantity I > Quantity II Explanation: Quantity I= 20% - 10% - (20*10/100) % = +8% Quantity II= 30% - 20% - (30*20/100)% = +4% Hence Quantity I > Quantity II