Percentages (Moderate Questions)

1. Because of scarcity of rainfall, the price of a land decrease by 12% and its production also decrease by 4%. What is the total effect on revenue ?

a) Loss of 16% b) Gain of 15%

c) Loss of 15.48% d) Gain of 15.48%

e) Loss of 15.52%

2. Mangulal a shopkeeper, marks the prices of his goods at 20% higher than the original price. After that he allows a discount of 5%. What profit or loss did he get?

a) 14% (profit) b) 14% (loss)

c) 16% (loss) d) 16% (profit)

e) None of the above

3. The prices of sugar is incerased by 25%. If a family wants to keep its expenses on sugar unaltered, then the family will have to reduce the consumption of sugar by

a) 20% b) 21%

c) 22% d) 25%

4. If the prices of tea falls down by 6% by how much per cent must a householder increased its consumption, so as not to decreased expenditure ?

a) 5 16/47% b) 4 18/67%

c) 6 18/47% d) 61 7/47%

e) None of the above

5. A student has to score 40% marks to get through. if he gets 40 marks and fails by 40 marks, then find the maximum marks set for the examination. ?

a) 200 b) 250

c) 300 d) 150

6. A candidate scores 20% and fails by 50 marks, while another candidate who score 40% marks, gests 30 marks more than the minimun required marks to pass the examination. Find the maximum marks for the examination.

a) 500 b) 450

c) 300 d) 400

e) None of the above

7. The population of a town is 126800. It increase by 15% in the 1st year and decrease by 20% in the 2nd year. What is the population of the town at the end of 2 yr.

a) 174984 b) 135996

c) 116656 d) 145820

e) None of the above

8. The population of a town is 705600. If it increases at the rate of 5% per annum, then what will be its population 2yr hence ?

a) 777924 b) 777881

c) 778781 d) 797724

e) None of the above

9. The population of a town is 1058400. if it increase at the rate of 5% per annum, then find the population of the town 2 yr ago.

a) 949000 b) 930000

c) 960000 d) 950000

e) None of the above

10. The population of a city is 250000. It is increasing at the rate of 2% every year. The growth in the population after 2 yr is ?

a) 2500 b) 10000

c) 252000 d) 10100

11. In a school, 10% of boys are equal to the one - fourth of the girls. What is the ration of boys and girls in that school?

a) 3 : 2 b) 5 : 2

c) 2 : 1 d) 4 : 3

12. Income of Suman is first increased by 7% and then it is decreased by 7%. What is the change in her income?

a) 0.49% (increase) b) 0.39% (decrease)

c) 0.39% (increase) d) 0.49% (decrease)

e) None of the above

13. 48% of the 1st number is 60% of the 2nd number. What is the ratio of the 1st number to the 2 nd number?

a) 4 : 7 b) 3 : 4

c) 5 : 4

d) Could't be determined

e) None of the above

14. The sum of 15% of a positive number and 20% of the same number is 126. What is one-third of that number

a) 360 b) 1080

c) 120 d) 40

e) None of the above

15. In a test, A scored 10% more than B and B scored 5% more than C. If C scored 300 marks out of 400, then A's marks are

a) 310 b) 325

c) 350 d) 360

16. Mathew scored 42 marks in Biology, 51 marks in Chemistry, 58 marks in Mathematics, 35 marks in Physics and 48 marks English. The maximum marks, a student can score in each subject, are 60. How much overall percentage did Mathew get in this exam ?

a) 76% b) 82%

c) 68% d) 78%

e) None of the above

17. A student was asked to measure the length and breadth of a rectangle. By mistake, he measured the length 20% less and the breath 10% more. if its original area is 200 sq cm, then find the area after this measurement ?

a) 176 sq cm b) 206 sq cm

c) 226 sq cm d)316 sq cm

e) None of the above

18. A box has 100 blue balls, 50 red ballss and 50 black balls. 25% of blue balls and 50% of red balls are taken away. Then, percentage of black balls at present is ?

a) 25% b) 33 1/3

c) 40% d) 50

19. The price of two article are as 3 : 4. If the price of the first article is increased by 10% and that if the second by ₹ 4 one original ratio remains the same. The original price of the second article is

a) ₹ 40 b) ₹ 10

c) ₹ 30 d) ₹ 35

20. from 2008 to 2009, the sales of a book decreased by 80%. If the sales in 2010 was the same as in 2008, by what per cent did it increase from 2009 to 2010 ?

a) 80% b) 100%

c) 120% d) 400%

21. In a particular constituency, 75% of voters cast their votes, out of which 2% were rejected. The winning candidate received 75% of the valid votes and bagged a total of 9261 votes. The total number of voters in the constituency is

a) 14500 b) 18900

c) 16800 d) 24000

22. Last year, there were 610 boys in a school. The number decreased by 20% this year. How many girl are there in the school, if the number of boys in the school this year ?

a) 854 b) 848

c) 798 d) 782

e) None of the above

23. Aryan got 350 marks and Vidya scored 76% marks in the same test. If Vidaya scored 296 marks more than Aryan, then what were the maximum marks of the test ?

a) 650 b) 900

c) 850 d) 950

e) None of the above

24. What should come in place of the question marks(?), so that it satisfies equality of the given equation ?

32% of 750 = ?

a) 23% of 600 b) 46% of 207

c) 98% of 250 d) 75% of 320

e) None of the above

25. In a class X of 30 students, 24 passed in first class; in another class Y of 35 students, 28 passed in first class. In which class was the percentage of students first class more ?

a) Class X has more percentage of students getting first class

b) Class Y has more percentage of students getting first class

c) Both classes have equal percentage of students getting first class

d) None of the above

26. Veena spends 25% of her monthly income on household expenses. Her annual income is ₹ 4.32 lakh. What is the total amount that Veena spends on household expenses in 8 months together ?

a) ₹ 74000 b)₹ 71000

c) ₹ 73000 d) ₹ 72000

e) None of the above

27. The salary of an employee of a company increase every month by 4%. If his salary in August was ₹ 6300, then what would be his approximate salary in month of October of the same year ?

a) ₹ 6552 b) ₹ 6967

c) ₹ 6814 d) ₹ 6627

e) None of the above

28. 1 L of water is added to 5 L of alcohol and water solution containing 40% alcohol strength. The strength of alcohol in the new solution will be ?

a) 30% b) 33 1/3%

c) 33 2/3% d) 33%

29. In an examination, 49% students failed in English, 36% students failed in Hindi, While 15% failed in both. if total number of passed students in 450, then how many students did appear in the examination ?

a) 1800 b) 2000

c) 1100 d) 1500

e) None of the above

30. Bina's monthly income is 90% of Anita's monthly income. The total of both their monthly income is Mr. Sen's monthly income. Mr. Sen's annul income is ₹ 775200. What is Bina's monthly income ?

a) ₹ 34000 b) ₹ 36000

c) ₹ 30600 d) ₹ 30000

e) None of the above

Percentages (LOD 02 Answers)

1. Correct Option: E

Net effect = [- 12 - 4 + {(-12) (-4)/100}]%

= (-16 + 0.48)%

= -15.52%

2. Correct Option: A

Given that, a = 20% and b = 5%

According to the formula

Required percentage = [20 - 5 - {20 x (5/100)}% = 14%

3. Correct Option: A

Let original price be ₹ 100

Then, increased price = ₹ 125

∴ Reduction in consumption

= [(125 - 100)/125] x 100%

= (25/125) x 100 %

= 20%

4. Correct Option: C

Let original price be ₹ 100

Then, reduced price = ₹ 94

∴ Increase in consumption

= [(100 - 94)/94] x 100 %

= (6/94) x 100 %

= 618/47%

5. Correct Option: A

Let maximum marks be N.

According to the question,

40N/100 = 40 + 40

⇒ 40N/100 = 80

∴ N = 200

6. Correct Option: D

Let the maximum marks be N.

According to the question,

(20N/100) + 50 = (40N/100) - 30

⇒ 20N/100 = 80

∴ N = (80 x 100)/20 = 400

7. Correct Option: C

Given, R = 15% and R2 = 20%

Required population

= P(1 + R1/100) (1 - R2/100)

= 126800(1 + 15/100) (1- 20/100)

= 126800 (1 + 3/20) (1- 1/5)

= 126800 x (23/20) x (4/5) = 116656

8. Correct Option: A

Given that,

P = 705600, R = 5% and n = 2

According to the formula,

Population after n yr = p(1 + R/100)n

∴ Population after 2 yr.

= 705600 x (1+ 5/100)2

= 705600 x (105/100)2

= 705600 x (21/20 x 21/20) = 777924

9. Correct Option: C

Given that,

p = 1058400, R = 5% and n = 2

According the formula,

Population n yr ago = $P/(1 + R/100)^n$

∴ Population 2yr ago = $1058400/(1+ 5/100)^2$

= 1058400 x 20/21 x 20/21 = 960000

10. Correct Option: D

Population after 2 yr

$= P (1 + R/100)^2$

$= 250000 (1 + 2/100)^2$

$\Rightarrow 250000 \times (51/50) \times (51/50) = 260100$

$\therefore$ Growth = 260100 - 250000 = 10100

11. Correct Option: B

Let the number of boys = B

and number of girls = G

Then, 10% of B = 1/4 of G

$\Rightarrow B/10 = G/4$

$\Rightarrow B/G = 10/4 = 5/2$

$\Rightarrow B : G = 5 : 2$

12. Correct Option: D

In such case, there is always decrease.

Given that, a = (common increase or decreased) = 7%

According to the formula,

Decreased Percentage $= a^2/100$ %

$= 7^2/100$ %

= 0.49%

13. Correct Option: C

Let 1st number be M and 2nd number be M.

According to the question,

48% of M = 60% N

$\Rightarrow (M \times 48)/100 = (N \times 60)/100$

$\Rightarrow M/N = (60/100) \times (100/48) = 5/4$

$\therefore M : N = 5 : 4$

14. Correct Option: C

Let the positive number be N.

According to the question

$N \times (15+ 20)\% = 126$

$\Rightarrow N \times 35 = 126 \times 100$

$\therefore N = 12600/35 = 360$

So, one-third of the number = 360/3 = 120

15. Correct Option: D

B's marks = C's marks + 5% of 400

= 300 + 20 = 320

Now , A's marks = B's marks + 10% of 400

= 320 + 40 = 360

16. Correct Option: D

Total marks scored by Mathew in all subjests = 42 + 51 + 58 + 35 + 48 = 234

$\because$ Maximum marks is 60 in any subject.

$\therefore$ Maximum marks = 60 x 5 = 300

$\therefore$ Percentage of Mathew's marks

= [(Marks obtained / Maximum marks)] x 100

= (234 / 300) x 100

= 234/3 = 78%

17. Correct Option: A

Net effect on area = -20 + 10 + [(-20)(10)/100] %

= (-10 - 2) % = -12%

Now, after this mistake new area = (100 - 12)% of 200

= (88/100) x 200

= 176 sq cm

18. Correct Option: B

After removing 25% of blue balls,

Total blue balls left = 75% of 100

= (75/100) x 100 = 75

After removing 50% of red balls, total red balls left = 50% 0f 50 = (50 x 50) / 100 = 25

$\therefore$ Required percentage = [50/(75 + 25 + 50)] x 100

= (50/150) x 100

= 331/3 %

19. Correct Option: A

Let cost prices of two article be 3N and 4N respectively then

(110% of 3N) / (4N + 4) = 3/4

⇒ 1.1N / (N + 1) = 1

⇒ 1.1N = N + 1

⇒ 0.1 N = 1

⇒ N = 10

Thus, cost price of the second article is 4 x 10 = ₹ 40

20. Correct Option: D

Let sale in 2008 = 100

Sale in 2009 = 20

Sale in 2010 = 100

∴ Required increases = [(100 - 20)/20] x100

= (80/20) x 100 = 400%

21. Correct Option: C

Let the total number of votes = N

According to the question,

75% of 98% of 75% of N = 9261

[∵ 2% votes were rejected]

⇒ (N x 75 x 98 x 75) / (100 x 100 x 100) = 9261

∴ N = (9261 x 100 x 100 x 100) / (75 x 75 x 98) = 16800

22. Correct Option: A

Last year number of boys in school = 610

∴ Number of boys in school this year = 610 - (610 x 20)/100

= 610 - 122 = 488

∴ Number of girls in school this year

= Number of boys in school this year x 175%

= (488 x 175)/100

= (488 x 7)/4

= 122 x 7

= 854

Hence, number of girls in school this year in 854.

23. Correct Option: C

Let maximum marks of the exam is N.

According to the question,

Marks obtained by Vidaya = Marks obtained by Aryan + 296

⇒ N x (76/100) = 350 + 296

⇒ N x (76/100) = 646

⇒ N = (646 x 100)/7

⇒ N = 8.5 x 100 = 850

∴ N = 850

24. Correct Option: D

32% of 750 = 750 x (32/100) = 240

From option (a), 23% of 600

= 600 x 23/100 = 138

From option (b), 46 % of 207

= 207 x 46/100 = 95.22

From option (c), 98% of 250

= 250 x 98/100 = 245

From option (d), 75% of 320

= 320 x 75/100 = 240

Hence, from option (d), satisfies equality of the equation.

25. Correct Option: C

For class X, let the students passed in first class = a%

Then, by condition given in question

a% of 30 = 24

⇒ (a x 30) /100 = 24

∴ a = 80%

Now, for class Y let the student passed in first class = b%

Then, according to the question,

b% of 35 = 28

⇒ (b x 35)/100 = 28

∴ b = (28 x 100)/35 = 80%

Hence, both classes have equal percentage of student getting first class.

26. Correct Option: D

Annual household expenses

= ₹ (25% of 4.32 x 105)

= ₹ (25/100) x 4.32 x 105

= ₹ (25 x 4.32 x 103)

∴ Household expenses for 8 months

= ₹ [(25 x 4.32)/(12 x 8)] x 103)

= ₹ 72000

27. Correct Option: C

Required salary in October

= 6300 x (104/100) x (104/100)

= 63 x 104 x 1.04

= ₹ 6814.08

≈ ₹ 6814

28. Correct Option: B

Quantity of alcohol in 5 L of solution = (40/100) x 5 = 2 L

Quantity of alcohol in 6 L of solution = 2 L

∴ Strength of alcohol in new solution = (2/6) x 100%

= 33 1/3%

29. Correct Option: D

According to the formula .

Percentage of students passed in both the subjects

= [100 - (x + y - z)]%

= [100 - (49 + 36 - 15)]% = 30%

Let total number of students = N

According to the question,

(N x 30)/100 = 450

⇒ N = (450/30) x 100 = 1500

∴ Total number of students = 1500

30. Correct Option: C

Mr. Sen's monthly income

= (Bina + Anita)'s monthly income = 775200/12 = ₹ 64600

According to the question.

Bina's monthly income = 90% of Anita's monthly income

⇒ Bina/Anita = 90/100 = 9 /10

⇒ Bina : Anita = 9 : 10

∴ Bina's Monthly salary

= (9/19) x 64600

= ₹ 30600