Which year was the gross Turnover..

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MODEL QUESTIONS

Directions (Q. No. 1–5) : What approximate answer should come in place the question mark (?) in the following questions? (You are not expected to calculate the exact value).

1. 14959.989 ÷ 15.012 + 13730 ÷ 98 = ?
a) 1140 b) 1236.63 c) 1040
d) 990 e) 1000

2. 134.786% of 479.998 + ?% of 322.011 = 727.5
a) 15 b) 35 c) 30
d) 25 e) 20

3. 2377.632 ÷ 18.05 – 4.96 × 8.001 = ?
a) 92 b) 106 c) 88
d) 96 e) 110

4. 61.884 × 12.91 × 16.502 = ?
a) 13184 b) 13992
c) 13400 d) 12078
e) 13299

5. $8.13^3 + 8^3 + 8.91^2 + (64.021)^{1/2}$ = ?
a) 5184 b) 1095 c) 1171
d) 1113 e) 1761

Directions (Q. No. 6–10) : Study the table carefully and answer the questions given below:

Financial Statement of A Company Over The Years

Year	Gross Turn over Rs.	Profit before interest and depreciation Rs.	Interest Rs.	Depreciation Rs.	Net profit Rs.
1980-81	1380.00	380.92	300.25	69.90	10.67
1981-82	1401.00	404.98	315.40	71.12	18.46
1982-83	1540.00	520.03	390.85	80.02	49.16
1983-84	2112.00	599.01	444.44	88.88	65.69
1984-85	2520.00	811.00	505.42	91.91	212.78
1985-86	2758.99	920.00	600.20	99.00	220.80

(Rupees in Lakhs)

6. During which year did the 'Net Profit' exceed Rs. 1 crore for the first time?
a) 1983–84 b) 1984–85
c) 1985–86 d) 1980–81
e) 1981–82

7. During which year was the 'gross Turnover' closest to the thrice the 'Profit before Interest and depreciation'?
a) 1980–81 b) 1981–82
c) 1983–84 d) 1985–86
e) 1984–85

8. During which of the given years did the 'Net Profit' form the highest proportion of the 'Profit before Interest and Depreciation'?
a) 1984–85 b) 1985–86
c) 1980–81 d) 1982–83
e) 1983–84

9. Which of the following registered the lowest increase in terms of rupees from the year 1984–85 to the year 1985 – 86?
a) Depreciation
b) Profit before int. and dep.
c) Net profit
d) Gross Interest
e) None of these

10. The 'Gross Turnover' for 1982 – 83 is about what per cent of the 'Gross Turnover' for 1984 – 85? (approximately)
a) 60 b) 70 c) 50
d) 40 e) 30

11. Ram and Ravi can separately do a piece of work in 20 and 15 days respectively. They worked together for 6 days, after which Ravi was replaced by Rohit. If the work was finished in next 4 days, then the number of days in which Rohit alone could do the work will be?
a) 40 b) 42 c) 45
d) 50 e) None of these

12. The marked price of an electric iron is Rs. 690. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain percent would be
a) 20% b) 24% c) 25%
d) 28% e) 36%

13. An officer's pension on retirement from service is equal to half the average salary during last 36 months of his service. His salary from 1 January, 2014 is Rs. 3800 per month with increment of Rs. 400 on 1 October 2014, October 2015 and 1 October, 2016. If he retires on 1 January, 2017, what pension does he draw?
a) Rs. 2100 b) Rs. 2150
c) Rs. 2200 d) Rs. 2250
e) Rs. 2300

14. Kannan covers the distance from his home to his office by bike. He travelled at a speed of 15 kmph; he reached the office late by 40 minutes. So he increased the speed by 3 kmph, he reached the office late by 30 minutes. Find the distance between the house and his office?
a) 20 km b) 21 km
c) 18 km d) 15 km
e) None of these

15. A person invested sum of the amount at the rate of 15% SI per annum for two years and received total amount of Rs. 19500. He invested same sum at the rate x% per annum compounded annually for two years and he received interest Rs. 2100 more as compared to the simple interest, then find the value of 'x'
a) 10% b) 15% c) 12%
d) 20% e) 24%

Directions (Q. No. 16–20) : In each of these questions, two equations numbered I and II are given. You have to solve both the equation and give answer
a) If $x > y$ b) If $x < y$
c) If $x \geq y$ d) If $x \leq y$
e) If $x = y$ or relation cannot be established

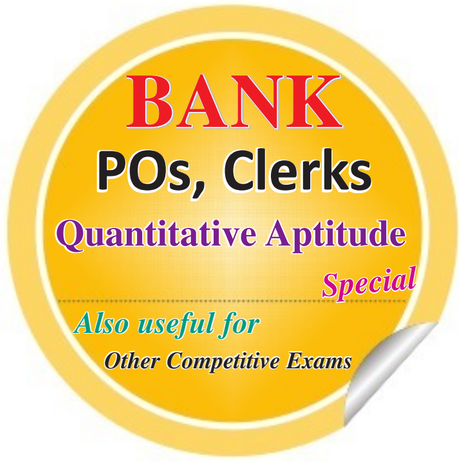
16. I. $5x^2 - 18x + 9 = 0$
II. $3y^2 + 5y - 2 = 0$

17. I. $\sqrt{x} - \frac{\sqrt{6}}{\sqrt{x}} = 0$
II. $y^3 - 6^{\frac{3}{2}} = 0$

18. I. $(625)^{1/4}x + \sqrt{1225} = 155$
II. $\sqrt{196}y + 13 = 279$

19. I. $3x^2 - 17x + 24 = 0$
II. $4y^2 - 15y + 14 = 0$

20. I. $x^2 - 2x - \sqrt{5}x + 2\sqrt{5} = 0$
II. $y^2 - \sqrt{3}y - \sqrt{2}y + \sqrt{6} = 0$



Solutions

1. 14959.989 ÷ 15.012 +13730 ÷ 98 = ?

$$= \frac{15000}{15} + \frac{13730}{98}$$

= 1000 + 140 = 1140 ***Ans:a***

2. 134.786% of 479.998 + x% of 322.011 = 727.5

$$\frac{135}{100} \quad 480 + \frac{x}{100} \quad 320 = 728$$

$$648 + \frac{x}{100} \quad 320 = 728$$

$$\frac{x}{100} \quad 320 = \quad 728 - 648$$

$$x = \frac{80}{3.2} = 25$$

Ans:d

3. 2377.632 ÷ 18.05 – 4.56 × 8.001= ?

$$\frac{2380}{18} - 5 \quad 8 = 132 - 40 = 92$$

Ans:a

4. 61.884 × 12.91 × 16.502 = ?
62 × 13 ×16.5 = 13299 ***Ans:e***

5. $8.23^3 + 8^3 + 8.91^2 + (64.021)^{1/2}$ = ?
$= 8^3 + 8^3 + 9^2 + \sqrt{64}$
= 512 + 512 +81 + 8 = 1113
Ans:d

6. 1984–85 only a look is needed (can be studied in the table).
Ans:b

7. In 1980–81, 'the gross turnover' closet to the thrice the 'profit before interest and depreciation'.
Ans: a

8. We look at the 'Net profit' and 'Profits before Interest and Depreciation'. We need to find the year in which 'profits before……..' is the smallest multiple of 'Net Profits'. Use approximations, 38 ÷ 1, 40 ÷ 2, 52 ÷ 5, 60 ÷ 6.5, 80 ÷20, 92 ÷ 22 and make quick mental calculation. Obviously any one of the last two is the answer. We have 80 ÷ 20=4, 92 ÷ 22 >4, and hence 80 ÷ 20 is the minimum. Hence, 1984 – 85 is the answer.
Ans:a

9. Mental calculation with approximation is sufficient. Among 2700 – 2500, 900 – 800, 600 – 500, 99 – 92 and 220 – 212, the fourth is a single digit figure and it is the least. ***Ans:a***

10. Approx $\frac{15}{25} \times 100 = 60$ ***Ans:a***

11. Ram and Ravi worked together

$$\frac{1}{20} + \frac{1}{15} = \frac{3+4}{60} = \frac{7}{60}$$

They work for 6 days so

$$\frac{7}{60} \quad 6 = \frac{7}{10}$$

Remaining work $\frac{3}{10}$ done by Ram and Rohit.
Ram and Rohit finished it in 4 days
$(^3/_{10}) \times$(Ram + Rohit)'s whole work = 4 (Ram + Rohit)'s
whole work = $^{40}/_3$
Rohit's one day work

$$= \frac{3}{40} - \frac{1}{20} = \frac{1}{40}$$

Rohit alone can complete the work in 40 days ***Ans:a***

12. Marked price = Rs. 690
∴ Discount = 10%

$$SP = \frac{690 \quad 90}{100} = Rs.621$$

Profit = 8%

$$\therefore CP = \frac{621}{108} \quad 100 = Rs.575$$

Profit without discount
= 690 – 575 = Rs. 115
Profit percent

$$= \frac{115}{575} \quad 100 = 20\%$$

Ans:a

13. Officer's pension = ½× Average Salary during last 36 months
His salary from 1st January, 2014 to 30th sept 2014, i.e for 9 months = 9×3800 = 34200
Salary from 1st OCT 2014 to 30th Sept 2015,
i.e. for 12 months.
= 12 × (3800+400) = 50,400
Salary from 1st oct 2015 to 30th sept 2016, i.e for 12 months
= 12×(3800+400) = 50,400
Salary from 1st oct 2016 to 31st Dec 2016
[∴ he retired on 1st Jan, 2017]
i.e. 3 months
= 3×(3800 + 1200) = 15000
∴ Officer's pension

$$= \frac{1}{2}\left[\frac{34200 + 50400 + 55200 + 15000}{36}\right]$$

= 2150 ***Ans:b***

14. Let distance between house to office 'x'
From Question,

$$\frac{x}{15} - \frac{40}{60} = \frac{x}{18} - \frac{30}{60}$$

$$\frac{x}{15} - \frac{x}{18} = \frac{2}{3} - \frac{1}{2}$$

$$\frac{6x - 5x}{90} = \frac{4-3}{6} \Rightarrow \frac{x}{90} = \frac{1}{6}$$

x =15 km/h ***Ans:d***

15. Let us take sum be y
Given, $\frac{130}{100} \times y = 19500$

$$\Rightarrow Y = 15000$$

$$S.I. = 15000 \times \left(\frac{15}{100}\right) \times 2 = 4500$$

C.I. = 4500 +2100 = 6600
Total amount
= 15000 + 6600 = 21600

$$15000\left(1 + \frac{x}{100}\right)^2 = 21600$$

$$\left(1 + \frac{x}{100}\right)^2 = \left(\frac{6}{5}\right)^2$$

$$1 + \frac{x}{100} \quad \frac{6/5x}{100} = \frac{1}{5} \Rightarrow x = 20\%$$

Ans:d

16. $5x^2 - 18x + 9 = 0$
$\Rightarrow 5x^2 - 15x - 3x + 9 = 0$
$\Rightarrow (5x - 3)(x - 3) = 0$
$\Rightarrow x = {}^3/_5$ or $x = 3$
$3y^2 + 5y - 2 = 0$
$\Rightarrow 3y^2 + 6y - y - 2 = 0$
$\Rightarrow (3y-1)(y + 2) = 0$
$\Rightarrow y = 1/3$ or -2 ***Ans:a***

17. $\sqrt{x} - \sqrt{6} / \sqrt{x} = 0$
$x - \sqrt{6} = 0 \Rightarrow x = \sqrt{6}$
$y^3 - 6\ (3/2\ ) = 0$
$\Rightarrow y^3 = (\sqrt{6})^3 \Rightarrow y = \sqrt{6}$ ***Ans:e***

18. $5x + 35 = 155$
$\Rightarrow 5x = 155 - 35$
$\Rightarrow x = 120/5 = 24$
$\sqrt{196}\ y + 13 = 279$
$\Rightarrow 14y = 279 - 13$
$\Rightarrow y = 266/14 = 19$ ***Ans:a***

19. $3x^2 - 17x + 24 = 0$
$\Rightarrow 3x^2 - 9x - 8x + 24 = 0$
$\Rightarrow (3x - 8)(x - 3) = 0$
$\Rightarrow x = 8/3$ or 3
$4y^2 - 15y + 14 = 0$
$\Rightarrow 4y^2 - 8y - 7y + 14 = 0$
$\Rightarrow (4y - 7)(y - 2) = 0$
$\Rightarrow y = 7/4$ or 2 ***Ans:a***

20. $x^2 - 2x - \sqrt{5}\,x + 2\sqrt{5} = 0$
$\Rightarrow x(x - 2) - \sqrt{5}\,(x - 2) = 0$
$\Rightarrow (x - 2)(x - \sqrt{5}) = 0$
$\Rightarrow x = 2$ or $\sqrt{5}$
$y^2 - \sqrt{3}\,y - \sqrt{2}\,y + \sqrt{6} = 0$
$\Rightarrow y(y - \sqrt{3}) - \sqrt{2}(y - \sqrt{3}) = 0$
$\Rightarrow (y - \sqrt{2})(y - \sqrt{3}) = 0$
$\Rightarrow y = \sqrt{2}$ or $\sqrt{3}$
Ans:a