

# TCS NQT

## Practice Questions for Cognitive Ability Test

from Channel B.Tech & TCSNQTPREP.COM

### Numerical Ability | Verbal Ability | Reasoning Ability

Learn more from our YouTube channel



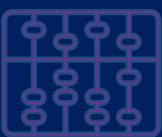
**Numerical  
Ability**

**Verbal  
Ability**

**Reasoning  
Ability**

by

Pragadeeswara Prabhu & Balakrishna  
Co-Founders, Channel B.Tech



Contacts: [trainers@channelbtech.in](mailto:trainers@channelbtech.in) +91 9566634509

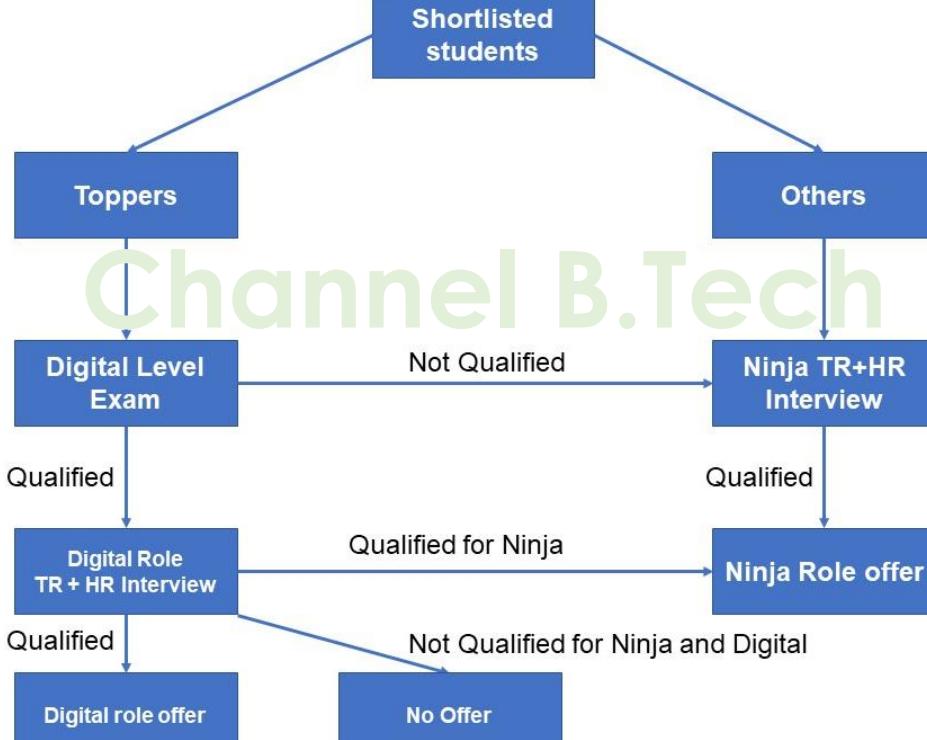
# TCS Ninja Hiring Process

Apply though TCS Next Step Portal



[Click here for link](#)

Take the test on TCSiON (NQT) portal through the link shared by TCS



**Channel B.Tech**  
**&**  
**TCSNQTPREP.COM**  
**(a part of Channel B.Tech)**

# TCS Ninja Eligibility

Eligibility criteria for TCS Ninja Hiring - YOP 2022:

- Percentage: Minimum aggregate (all subjects in all semesters) marks should be 60% or 6 CGPA in Class Xth, Class XIIth, Diploma (if applicable), Graduation and Post-Graduation examination
- Backlogs / Arrears / ATKT: Students should not have more than 1 active backlog / arrear/ ATKT at the time of appearing for the TCS Selection process in the highest qualification. If selected, students should not have any pending backlog or arrear at the time of joining TCS
- Gap / Break in Education: It is mandatory to declare gaps in education, if any. Break in education should not be due to extended education (examinations cleared after the time stipulated by the Board / University). Any break in education should not exceed 24 months and is permissible only for valid reasons. Relevant document proof, as applicable, will be checked for gaps in education
- Course Types: Only Full-Time courses will be considered (Part Time / Correspondence courses will not be considered). Students who have completed their Secondary and / or Senior Secondary course from NIOS (National Institute of Open Schooling) are also eligible to apply if the other courses are full time. All pending backlogs should be completed within the stipulated time duration
- Work Experience: Students with prior work experience of up to 2 years are eligible to apply for the TCS Ninja hiring process
- Age: Students should be of 18 to 28 years of age to participate in the TCS Ninja hiring process
- Courses & Discipline: UG/PG Engineering Courses from B.E. / B.Tech / M.E. / M.Tech / MCA / M.Sc from any specialization offered by the university / college are only eligible to apply

## TCS Ninja Test Pattern from the official site

PART A	Cognitive Skills	
	Group Name	Time
1	Numerical Ability	40 Mins
2	Verbal Ability	30 mins
3	Reasoning Ability	50 mins
<b>Total</b>		<b>120 mins</b>
PART B	Programming	
1	Programming Logic	15 mins
2	Hands-on Coding	45 mins
<b>Total</b>		<b>60 mins</b>
<b>Total Test Duration</b>		<b>180 Mins</b>

# TCS NQT Cognitive Ability Test

## Numerical Ability

- Number System
- Arithmetic
- Elementary Statistics
- Data Interpretation

26 Questions – 40 minutes

## Verbal Ability

- English Grammar
- Reading Comprehension

24 Questions – 30 minutes

## Channel B Tech

### Reasoning Ability

- Identifying Word and Numeric Patterns
- Problem Solving
- Figural and Factual Analysis
- Decision Making
- Propositional Reasoning
- Visual/Spatial Reasoning

30 Questions – 50 minutes

TCS NQT is an adaptive kind of test. Once you answer a question, you cannot go back to that question.

No negative marks for wrong answers.

Take the official sample test [here](#).

Note: This book is updated on July 2021.

For the latest version, visit:

[www.tcsnqtprep.com/tcsnqtbook](http://www.tcsnqtprep.com/tcsnqtbook)

# TCS NQT Cognitive Ability Test - Syllabus

S.No	Topics Under Numerical Ability	Min. Expected Questions
1	Percentage, Profit Loss and Discount	3
2	Simple and compound interest	2
3	Elementary Statistics	3
4	Simplification	3
5	Ratio and Proportion	3
6	Time and Work	2
7	Time Speed Distance	2
8	Mensuration	2
9	Data Interpretation	2
10	Number Systems	1

S.No	Topics Under Verbal Ability – <a href="#">Click here for Book 2</a>	Min. Expected Questions
1	Reading Comprehension	8
2	Passage Ordering	6
3	Fill in the blanks – Vocabulary	2
4	Fill in the blanks – Grammar	3
5	Error Spotting	3
6	Combining the sentences	1
7	Formal Language	1

S.No	Topics Under Reasoning Ability – <a href="#">Click here for Book 2</a>	Min. Expected Questions
1	Figural & Factual Analysis	5
2	Visual Reasoning	5
3	Statement Conclusion/Assumption/Argument/Course of Action	4
4	Decision Making	3
5	Ranking and Ordering	3
6	Series completion & Coding and Decoding	3
7	Blood Relations	3
8	Data Sufficiency	3
9	Syllogism	1



# Table of contents

S.No	Topics Under Numerical Ability
1	Percentage, Profit Loss and Discount
2	Simple and compound interest
3	Elementary Statistics
4	Simplification
5	Ratio and Proportion
6	Time and Work
7	Time Speed Distance
8	Mensuration
9	Data Interpretation
10	Number Systems



S.No	Topics Under Verbal Ability – <a href="#">Click here for Book 2</a>
1	Reading Comprehension
2	Passage Ordering
3	Fill in the blanks – Vocabulary
4	Fill in the blanks – Grammar
5	Error Spotting
6	Combining the sentences
7	Formal Language



S.No	Topics Under Reasoning Ability – <a href="#">Click here for Book 2</a>
1	Figural & Factual Analysis
2	Visual Reasoning
3	Statement Conclusion/Assumption/Argument/Course of Action
4	Decision Making
5	Ranking and Ordering
6	Series completion & Coding and Decoding
7	Blood Relations
8	Data Sufficiency
9	Syllogism



Channel B.Tech

# 1. Percentage Profit Loss and Discount

**Q1:** Ava and Eve sold their rings for the same price. Ava calculated her profit percentage with respect to cost price and Eve calculated her profit percentage with respect to selling price. If the profit percentage calculated by both is 20% each, and the difference between the profit earned by them is Rs. 200, what is the cost price of the ring owned by Ava?

- a) Rs. 4800
- b) Rs. 5000
- c) Rs. 6000
- d) Rs. 7200

**Q2:** Price of petrol increased by 20%, and a man is willing to increase his expenditure by  $x\%$ . If he reduces the consumption by 12%, what is the value of  $x$ ?

- a) 8%
- b) 5.6%
- c) 6%
- d) 2.8%

**Q3:** By selling the products at 75% of the marked price, a salesman sells 40% more products. If his revenue is increased by Rs. 2800/-, what revenue did he make before he made the changes?

- a) Rs. 56000
- b) Rs. 14000
- c) Rs. 42000
- d) Rs. 70000



**Q4:** A lady bargained with the shopkeeper and got 30% discount from the marked price, which resulted in a loss of 16% to the shopkeeper. The shopkeeper then decided to increase the marked price of the similar products so that he will get neither loss nor profit even after giving 30% discount for the future customers. His new marked price is approximately what percentage more than his initial marked price?

- a) 20%
- b) 21%
- c) 19%
- d) 18%

**Q5:** A number is increased by 35% and then subtracted from 85% of the number. If the result is 1500, what is 15% of 20% of the number?

- a) 60
- b) 75
- c) 90
- d) 105

**Q6:** A shopkeeper thought he has 200 candies. Cost price of each candy is same, and he marked up the price of each candy by same value. He planned to sell all the candies at 30% discount from the marked price to get 12% profit. Later, he found that some rats ate 20 of these chocolates. What percentage discount must he give now, per chocolate, so that he can get the same profit percentage he planned earlier?

- a) 20.2%
- b) 22.2%
- c) 24.2%
- d) 26.2%

# 1. Percentage Profit Loss and Discount

**Q7:** XYZ company produce A type and B type products in the ratio 5:9. If 95% of type A products pass the quality test and 94% of type B products pass the quality test, approximately what percentage of the total number of products of type A and B do not pass the quality test?

- a) 5.35%
- b) 5.42%
- c) 5.65%
- d) 5.82%

**Q8:** Profit percentage of an organization increased by 60% compared to last year, and the profit share given to each shareholder increased by 25% compared to last year. What is the percentage increase in number of shareholders compared to last year?

- a) 16%
- b) 20%
- c) 24%
- d) 28%

**Q9:** A man bought 25 apples for Rs. K and sold only some of these apples to get his investment back. Profit obtained for each apple, when compared to the selling price of each apple, we get 8%. How many apples did he sell to get his investment back?

- a) 23
- b) 24
- c) 22
- d) 22.5

**Q10:** A food cart employee gets 10% commission if the sales on a particular day is up to Rs. 800. If the sales amount exceeds Rs. 800, he gets 5% commission on the extra sales amount. At the end of the day, he gave Rs. 1860 to his employer, after taking his commission. For how much was the sale on that day?

- a) 4000
- b) 3000
- c) 2500
- d) 2000

**Q11:** A shopkeeper marked up the price of a product by 50% and then gave two successive discounts. If he gets 14% profit, and the first discount is 20%, what percentage discount did he give for the second time?

- a) 10%
- b) 5%
- c) 6%
- d) 8%



**Q12:** A shopkeeper obtained 2% profit after giving a discount of 15% from the list price. If he had given 20% discount instead, what would have been his profit or loss percentage?

- a) 3% loss
- b) 5% loss
- c) 6% loss
- d) 4% loss

**Q13:** A man purchased 2 mobile phones. Price of the first phone is same as the price of the second phone. He sold the first phone at 20% profit and the second phone at 12% loss. What is the net profit or loss percentage obtained in this transaction?

- a) 16% profit
- b) 16% loss
- c) 4% profit
- d) 4% loss

# 1. Percentage Profit Loss and Discount

**Q14:** A jewellery shop owner purchased 10 grams of gold and 20 grams of silver for a total price of Rs. 28000. He made a total profit of Rs. 800 by selling the gold at 2% profit and the silver at 5% profit. What is the difference between the cost price of 1 gram of gold and 1 gram of silver?

- a) Rs. 1200
- b) Rs. 1400
- c) Rs. 1600
- d) Rs. 1800



**Q15:**  $(x+10)\%$  of 400 is 40 more than  $10\%$  of 2000.  $10\%$  of  $(x+150)$  is what percentage less than  $50\%$  of  $x$ ?

- a) 16.66%
- b) 18.18%
- c) 20.00%
- d) 25.00%

Channel B.Tech  
&  
TCSNQTPREP.COM  
(a part of Channel B.Tech)

# How to get Video Solutions?

# Video Solutions will be available from 26 July 2021.



26 topics from Numerical Ability,  
Verbal Ability & Reasoning Ability  
will be discussed in the course.

Register here for video course.

[www.tcsnqtprep.com/tcsnqtbook](http://www.tcsnqtprep.com/tcsnqtbook)

A part of Channel B.Tech

For support, contact

Pragadeeswara Prabhu @

+91 9566634509

Or

[trainers@channelbtech.in](mailto:trainers@channelbtech.in)

## 2. Simple & Compound Interest

**Q1:** What is the simple interest obtained for Rs. 15000 at 6% p.a. if the amount is deposited on Jan 1 2020 and withdrawn on the end of July 1 2020?

- a) Rs. 480
- b) Rs. 450
- c) Rs. 420
- d) Rs. 390

**Q2:** Rs. 20000 invested at compound interest becomes 34560 in 3 years. If the same amount is invested in compound interest for 6 months where the interest is compounded quarterly, what will be the interest obtained?

- a) 2000
- b) 2100
- c) 2050
- d) 2150



**Q3:** A sum invested at simple interest becomes 17760 in 8 years and Rs. 20640 in 12 years. What is the rate of interest?

- a) 5%
- b) 5.5%
- c) 6%
- d) 6.5%

**Q4:** A sum of money invested at simple interest becomes Rs. 990 in 3 years and Rs. 1125 in 4.5 years. What is the amount invested?

- a) 900
- b) 800
- c) 840
- d) 720

**Q5:** At certain percentage compound interest, a sum invested becomes 58080 in 2 years and 63888 in 3 years. What is the sum invested?

- a) 46000
- b) 52800
- c) 48000
- d) 45000

**Q6:** Amount invested at simple interest at 11% per annum for 4 years will give the same interest obtained through compound interest for 2 years. What is the difference between the rate of simple interest and the rate of compound interest?

- a) 2
- b) 4
- c) 7
- d) 9

**Q7:** A lends Rs. 5000 to B and Rs. X to C at 8% p.a. simple interest for 4 years. The total interest obtained is Rs. 2880. Find X.

- a) 3000
- b) 3600
- c) 4000
- d) 4500

**Q8:** A sum of money at quarterly compound interest becomes 120000 in 12 months and Rs. 139968 in 18 months. What is the rate of interest per annum?

- a) 32%
- b) 34%
- c) 36%
- d) 40%

## 2. Simple & Compound Interest

**Q9:** A man borrowed an amount for three years from a woman who fixed a yearly rate of 20% compound interest with the condition of paying in equal instalments of Rs. 9494.5. The total amount paid by the man is approximately what percentage more than the amount he borrowed?

- a) 52%
- b) 48%
- c) 42%
- d) 36%

**Q10:** Vishnu purchased a television worth Rs. 60000 by paying Rs. 10000 as down payment, and he opted for a 5-year equal annual instalment plan which collects 10% simple interest per annum, for the balance amount. What is his annual instalment amount?

- a) 12500
- b) 12100
- c) 12050
- d) 12150

**Q11:** Compound interest obtained for 2 years for a certain sum of money is Rs. 3520. Compound interest obtained for three years is Rs. 5824. What is the principal amount?

- a) 6000
- b) 8000
- c) 4000
- d) 10000

**Q12:** Simple interest obtained for a certain sum of money lent is Rs. 600 over two years. If the same amount was invested in compound interest, Rs. 30 more would have been obtained through interest. What is the sum lent?

- a) 3000
- b) 3600
- c) 3150
- d) 6000



**Q13:** The difference between simple and compound interest(compounded annually) on a certain sum of money for 2 years at 5% per annum is Rs. 2. What is the simple interest obtained for the same sum in 5 years at double the rate of interest?

- a) 400
- b) 480
- c) 500
- d) 600

**Q14:** A man invested money in two schemes X and Y at 5% p.a. and 10% p.a. compound interest, respectively. If the total amount of interest in two years was Rs. 4175 and the total amount invested was Rs. 25,000, find out the amount invested in scheme X?

- a) 10000
- b) 15000
- c) 12500
- d) Cannot be determined

**Q15:** A sum invested at compound interest becomes 4 times itself in 14 years. How long will it take to become 16 times itself?

- a) 56 years
- b) 35 years
- c) 28 years
- d) 21 years

### 3. Elementary Statistics

**Q1:** The mean of a set of data is 16. What is the mean after adding 4 to each observation in the data?



**Q2:** The median of  $(14, 23, 56, 34, 28, x, 20, 21)$  is 24. What is the value of  $x$ ?



**Q3:** The mean of 14 observations is 45. By adding one more observation, the mean becomes 46. What is the value of the new observation?



**Q4:** What is the mean of the mode and median of the data?

19, 17, 16, 14, 15, 12, 14, 15, 13, 15, 15, 20, 20, 15, 21, 14.

- a) 14      **Channel**      b) 15  
c) 16      d) 17

**Q5:** There are 5 boys whose age is 12, 3 boys whose age is 14, 4 boys whose age is 15, and 8 boys whose age is 16. What is the mean age of all the boys?



**Q6:** The mean of the given set of data is 23. What is the missing frequency?

Price of the product	12	15	18	30	40
Frequency	2	4	3	5	?



**Q7:** The mean of the following data correct to one decimal point is:

Class	0-6	6-12	12-18	18-24	24-30	30-36
Frequency	5	10	15	20	10	5



**Q8:** The median time from 4:00 am Monday till 9 pm following Friday is:

### 3. Elementary Statistics

**Q9:** Find the median of the frequency distribution table.

Class	11-15	16-20	21-25	26-30	31-35
Frequency	5	4	1	2	3

- a) 16.375      b) 18.625  
c) 19.125      d) 19.875

**Q10:** What is the sum of the mode of the modal distribution and the modes of the bimodal distribution given below?

Shoe sizes: 6,6.5,7,7.5, 7.5, 8, 8, 8, 8, 8.5, 9, 9, 9.

T-Shirt sizes: 34, 34, 35, 35, 35, 35, 36, 36, 38, 38, 40, 40, 40 , 40, 42, 42.

- a) 80      b) 83  
c) 85      d) 86



**Q11:** What is the difference between the frequency of the modal class and the median class of the given distribution?

Class	0-20	20-40	40-60	60-80	80-100
Frequency	15	12	23	25	19

- a) 3      b) 2  
c) 1      d) 4

**Q12:** By what value should the third largest value be subtracted so that the mean and the median of the given set of data becomes equal?

30, 40, 26, 24, 32, 44, 48, 20, 50.

- a) 22      b) 24  
c) 26      d) 28

**Q13:** The upper class limit of the highest class is 89 more than the lower class limit of the least class of a grouped distribution. If there are 10 classes, what is the difference between the upper class limit of the 4<sup>th</sup> class and the lower class limit of the 8<sup>th</sup> class?

- a) 28      b) 35  
c) 21      c) 42

### 3. Elementary Statistics

**Q14:** What is the mean deviation of the given data?

8, 14, 10, 12, 13, 4, 6, 12, 20, 18

- a) 2.89
- b) 4.29
- c) 2.88
- d) 3.76



**Q15:** Calculate the mean, variance and standard deviation for the following distribution:

Class	30-40	40-50	50-60	60-70	70-80
Frequency	3	7	12	15	8

- a) Mean = 57; Variance = 130.66; Standard Deviation = 11.43
- b) Mean = 58; Variance = 130.66; Standard Deviation = 11.43
- c) Mean = 59; Variance = 130.66; Standard Deviation = 11.43
- d) Mean = 60; Variance = 130.66; Standard Deviation = 11.43

**Channel B.Tech**  
**&**  
**TCSNQTPREP.COM**  
**(a part of Channel B.Tech)**

# 4. Simplification

**Q1:** Which of these following expressions give the highest value?

- a)  $\sqrt{50} - \sqrt{49}$       b)  $\sqrt{49} - \sqrt{48}$   
c)  $\sqrt{48} - \sqrt{47}$       d)  $\sqrt{47} - \sqrt{46}$

**Q2:**  $[(\sqrt{120^{0.5}} + 200^{0.5}) \times (\sqrt{3} - 1)]^2$  is approximately equal to:

- a) 8      b) 30  
c) 20      d) 29

**Q3:** What is the value of  $\sqrt[8]{0.00006561}$  ?

- a) 0.003      b) 0.03  
c) 0.3      d) 3



**Q4:**  $3^a \times 4^b \times 5^c = 10800$ . What is the value of  $a^b + b^c$  ?

- a) 12      b) 13  
c) 14      d) 15

**Q5:** What is the value of  $5\frac{2}{3} + (2\frac{1}{4} + 3\frac{1}{5} \text{ of } 20) - 1\frac{1}{2}$  ?

- a)  $70\frac{5}{12}$       b)  $80\frac{5}{12}$   
c)  $92\frac{5}{12}$       d)  $100\frac{5}{12}$

**Q6:** What is the simplified value of

$$\frac{\left(\frac{9}{20}\right)^2 - \left(\frac{9}{50}\right)^2}{\left(\frac{7}{100} + 0.28 \times 2\right)}$$

- a) 0.24      b) 0.27  
c) 0.30      d) 0.36

**Q7:** What is the simplified value of

$$\frac{2.1^2 + 11.13 + 5.3^2}{2.1 \times 4.41 - 5.3 \times 28.09}$$

- a)  $\frac{5}{16}$       b)  $-\frac{5}{16}$   
c)  $\frac{2}{15}$       d)  $-\frac{2}{15}$

**Q8:** What is the simplified value of

$$\frac{\sqrt{12 + \sqrt{140}}}{\sqrt{12 - \sqrt{140}}}$$

- a)  $6 + 2\sqrt{35}$       b)  $8 + 2\sqrt{35}$   
c)  $6 + \sqrt{35}$       d)  $8 + \sqrt{35}$

# 4. Simplification

**Q9:** What is the value of

$$\frac{(6.59 - 3.13)^2}{(3.13 - 1.08)(1.08 - 6.59)} + \frac{(3.13 - 1.08)^2}{(1.08 - 6.59)(6.59 - 3.13)} + \frac{(1.08 - 6.59)^2}{(6.59 - 3.13)(3.13 - 1.08)}$$

- a) 0      b) 1  
c) 2      d) 3

**Q10:** What is the simplified value of

$$\sqrt{8 + \sqrt{57 + \sqrt{38 + \sqrt{108 + \sqrt{169}}}}}$$

- a) 4      b) 6  
c) 8      d) 10



**Q11:** For what value of \$, the given equation is correct?

$$\frac{\$}{126} \times \frac{\$}{210} = \frac{1}{15}$$

- a) 28      b) 42  
c) 56      d) 70

**Q12:** What is the value of

$$3 + \frac{1}{1 + \frac{1}{2 + \frac{1}{4}}}$$

- a)  $\frac{13}{24}$       b)  $\frac{13}{16}$   
c)  $\frac{13}{48}$       d)  $\frac{13}{96}$

**Q13:** What is the value of

$$\frac{\left[ \left( 2 + \frac{2}{22 + \frac{1}{11}} \right) \times \left( 2 + \frac{2}{22 + \frac{1}{11}} \right) - \left( 2 - \frac{2}{22 + \frac{1}{11}} \right) \times \left( 2 - \frac{2}{22 + \frac{1}{11}} \right) \right]}{\left[ \left( 2 + \frac{2}{22 + \frac{1}{11}} \right) + \left( 2 - \frac{2}{22 + \frac{1}{11}} \right) \right]}$$

- a)  $\frac{22}{243}$       b)  $\frac{11}{243}$   
c)  $\frac{44}{243}$       c)  $\frac{33}{243}$

## 4. Simplification

**Q14:** What is the value of

$$\frac{1}{11} + \frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{90} + \frac{1}{110}$$

- a) 1
- c) 3

- b) 2
- d) 4

**Q15:** Evaluate

$$2\frac{1}{3}^{3\frac{3}{4}} \div \frac{6}{5} \times \left( \frac{1}{9} + \frac{3}{8} \right) + \frac{9}{2} \div \frac{1}{3} \text{ of } 960$$



- a) 14595
- c) 12325

- b) 13585
- d) 15465

Channel B.Tech  
&  
TCSNQTPREP.COM  
(a part of Channel B.Tech)

# 5. Ratio & Proportion

**Q1:** What is the fourth proportion to 0.008, 1.6 and  $\frac{1}{5}$ ?

- a) 32
- b) 40
- c) 48
- d) 64

**Q2:** Ages of A, B and C are in the ratio 4:5:8, respectively. The eldest person is 24 years older than the youngest person. After how many years from now, the age of B will be equal to the present age of C?

- a) 24
- b) 22
- c) 20
- d) 18



**Q3:** When a number N is divided in the ratio 2:5:11, the largest number obtained is 820 more than the largest value obtained when divided in the ratio 5:7:13. What is the number?

- a) 12000
- b) 10000
- c) 9000
- d) 8000

**Q4:** Heights of A, B and C were in the ratio 9:10:11 three years back. If their heights increased by 10%, 20% and 30% till now, what is the ratio between their heights now?

- a) 100:120:140
- b) 99:120:143
- c) 10:11:14.3
- d) Cannot be determined

**Q5:** 13000 is divided among 4 numbers a, b, c, and d so that  $a:b = b:c = c:d = 3:2$ . What is the difference between a and d?

- a) 3800
- b) 3400
- c) 3000
- d) 2600

**Q6:** Ratio between the ages of R and S, 5 years back was 3:4. If their total age at present is 80, what will be the ratio between their ages 5 years from now?

- a) 4:5
- b) 3:5
- c) 5:3
- d) 5:6

**Q7:** What is the largest value obtained when 27800 is divided in the ratio  $\frac{1}{2}:\frac{1}{3}:\frac{1}{5}:\frac{1}{8}$

- a) 15000
- b) 12500
- c) 12000
- d) 10000

**Q8:** What is the ratio between a and b if  $(4x^2 - 3y^2):(2x^2 + 3y^2) = 74:118$

- a) 4:3
- b) 2:3
- c) 3:2
- d) 4:5

**Q9:** 60 litres of mixture A is mixed with 80 litres of mixture B. If mixture A contains milk and water in the ratio 5:1, and mixture B has milk and water in the ratio 3:1, what is the quantity of milk in the resulting mixture?

- a) 110 litres
- b) 30 litres
- c) 90 litres
- d) 50 litres

# 5. Ratio & Proportion

**Q10:** Salaries of A and B are in the ratio 8:11. Their expenditures are in the ratio 7:10. If they save Rs. 4000 each, what is the expenditure of B?

- a) 32000
- b) 36000
- c) 40000
- d) 44000

**Q11:** A, B and C started a business investing in the ratio 4:6:9. B invested 20000 more at the end of 1 year, and C withdrew 30000 at the end of 2 years. The ratio between their profit shares at the end of 3 years is 6:11:12. What is the initial investment made by B?

- a) 90000
- b) 40000
- c) 60000
- d) 30000

**Q12:** Bottle A contains wine and water in the ratio 6:5. Bottle 2 contains wine and water in the ratio 4:9. contents of bottle A and bottle B are mixed in the ratio 1:2. If 858 ml of the resulting mixture is taken and mixed with  $x$  ml of pure wine, the ratio between wine and water becomes 1:1. Find  $x$ .

- a) 144 ml
- b) 154 ml
- c) 174 ml
- d) 194 ml



**Q13:** Two numbers are in the ratio 6:7. If 15 is subtracted from the first number and 20 is added to the second number, the ratio between the resulting values is 3:4. What is the ratio between the resulting values if the first number is reduced by 20 and the second number is reduced by 5?

- a) 4:1
- b) 3:2
- c) 4:3
- d) 4:5

**Q14:** Bags A, B and C contain mixtures of wheat and rice in the ratio 4:1, 5:2 and 2:1 respectively. If the contents of these bags are taken in the ratio 10:14:15 and put inside a large bag, what is the ratio between wheat and rice in the resulting mixture?

- a) 5:1
- b) 4:1
- c) 3:1
- d) 2:1

**Q15:** Ages of A and B are in the ratio 4:5. After 10 years their ages will be in the ratio 13:15. What was the age of B when A is born?

- a) 2 years
- b) 4 years
- c) 6 years
- d) 8 years

# 6. Time and Work

**Q1:** 9 men and 20 women, working together, can complete a work in 15 days. The quantity of work done by 1 man and 3 women is one-eighth the quantity of work done by 9 men and 20 women, for any given duration. How long will it take for 28 women to complete the work?

- a) 18 days
- b) 24 days
- c) 30 days
- d) 36 days

**Q2:** It was assumed that 65 boys can complete make 240 candles in 6 hours. After an hour, it was observed that only 30 candles are made. How many more boys must be added so that the work will get completed on time?

- a) 91
- b) 26
- c) 92
- d) 27



**Q3:** A is 5 times as efficiency as B. Time taken by A and B together to complete the work is  $3\frac{1}{3}$  days less than the time taken by A alone to complete the work. How long will B alone take to complete the work?

- a) 40 days
- b) 50 days
- c) 75 days
- d) 100 days

**Q4:** Time taken by B to complete a work is 20 days ore than the time taken by A to complete the same work. If they work together, they complete the work in 24 days. What is the time taken by A alone to complete the work?

- a) 60 days
- b) 80 days
- c) 70 days
- d) 40 days

**Q5:** 6 boys can complete a work in 40 days, and 8 girls can complete the same work in 30 days. How long will a team of 24 boys and 24 girls take to complete the work?

- a) 5 days
- b) 8 days
- c) 10 days
- d) 12 days

**Q6:** A certain number of workers were deployed to finish a work in certain amount of time. After  $28\frac{4}{7}\%$  of the allotted time, it was found that only 25% of the work is completed. By what percentage, the number of workers should be increased so that the work will get completed on time?

- a) 20%
- b) 25%
- c) 30%
- d) 40%

**Q7:** Jen can complete a work 60 days before Ken completes the work, if they started working at the same time, individually, on the same kind of work. Together they can complete that work in 16 days. If a contractor makes them to work together to do thrice the amount of work and agrees to pay a total of Rs. 45000/- what part of the total amount should be given to Jen?

- a) 30000
- b) 36000
- c) 12000
- d) 3000

# 6. Time and Work

**Q8:** 4 men and 10 women working together can complete a work in  $22\frac{2}{9}$  days. 5 men and 20 women can complete the same task in  $13\frac{1}{3}$  days. How long will it take for 2 men to complete the work?

- a) 200 days
- b) 120 days
- c) 100 days
- d) 80 days



**Q9:** 36 machines working 8 hours a day for 6 days can produce 12000 candies. How many days will it take for 40 machines working 7 hours 12 minutes a day to produce 15000 candies?

- a) 1 day
- b) 3 days
- c) 4 days
- d) 5 days

**Q10:** A girl is thrice as efficient as a boy. 12 boys and 16 girls together can complete a work in 12 hours. How long will it take for 15 boys and 25 girls to complete the same work?

- a) 6 hours
- b) 8 hours
- c) 9 hours
- d) 10 hours

**Q11:** A and B together can complete a work in 40 days. B and C together can complete the work in 60 days. A and C together can complete the work on 50 days. How long will it take for C alone to complete the work?

- a) 70.5 days
- b) 92.3 days
- c) 171.4 days
- d) 133.1 days

**Q12:** Tony is 45% more efficient than Montana. Montana alone can complete a work in 29 days. How long will it take for Tony to complete 2.5 times the work?

- a) 50 days
- b) 75 days
- c) 20 days
- d) None of these

**Q13:** Pipe A can fill a tank in 80 minutes and pipe B can fill the same tank in 100 minutes. Both pipes were opened together to fill an empty tank. After half of the tank is filled, on alternate minutes pipes A and B were opened, with A filling for the first minute followed by B for the next minute. What is the approximate total time taken to fill the tank?

- a) 62 minutes
- b) 64 minutes
- c) 66 minutes
- d) 68 minutes

**Q14:** Pipe A can fill a tank in 24 minutes and pipe B can fill the same tank in 36 minutes. Both pipes were opened to fill the empty tank. Due to a leak at the bottom, only one-fifteenth of the tank is filled per minute. How long will it take for the leak alone to empty a half filled tank?

- a) 6 hours
- b) 3 hours
- c) 2 hours
- d) 1 hour

## 6. Time and Work

**Q15:** Ajay alone can complete a work in 80 days. Ajay starts working and leaves after 30 days. Benjamin takes up the remaining work and completes it in 40 days. If Ajay worked for 20 more days, and Benjamin did the remaining work, how early or late the work would have got completed?

- a) 4 days late
- b) 4 days early
- c) 8 days late
- d) 8 days early



**Channel B.Tech**  
**&**  
**TCSNQTPREP.COM**  
**(a part of Channel B.Tech)**

# 7. Time Speed & Distance

**Q1:** Two cars of length 1.6 m and 1.8 m travel in opposite directions with average speeds 50 cm per second and 35 cm per second. How long will they take to cross each other?

- a) 2 sec
- b) 3 sec
- c) 4 sec
- d) 5 sec

**Q2:** A train should travel 500 km to reach its destination. In 2 hours, the train has covered  $\frac{3}{7}$ th of the remaining distance. What is the time taken by the train to reach the destination?

- a) 6 hours 20 minutes
- b) 6 hours 40 minutes
- c) 6 hours 30 minutes
- d) 6 hours 45 minutes



**Q3:** A train should cover 400 km in 3 hours. It travels at a speed of 90 kmph for the first 1 hour 20 minutes. After that it stopped for 20 minutes due to an engine problem. The train increases its speed by  $x$  times compared to the previous speed and reaches destination as per schedule. Find  $x$ .

- a) 2.00
- b) 2.25
- c) 2.33
- d) 2.50

**Q4:** Time taken by a boat to row 36 km upstream and 45 km downstream is 7 hours. Time taken by the boat to row 45 km upstream and 60 km downstream is 9 hours. What is the speed of the boat in still water?

- a) 20 kmph
- b) 16 kmph
- c) 12 kmph
- d) 8 kmph

**Q5:** Total time taken by a man to walk from point A to point B at a speed of 36 kmph and back from point B to point A at a speed of 24 kmph is 2 hours. What is the distance between A and B?

- a) 28.8 km
- b) 57.6 km
- c) 32.4 km
- d) 64.8 km

**Q6:** A train running at a speed of 51 kmph takes 40 seconds to cross a man walking in the opposite direction at a speed of 3 kmph. The same train takes 90 seconds to cross a platform. What is the length of the platform?

- a) 720 m
- b) 675 m
- c) 780 m
- d) 810 m

**Q7:** Ratio between speeds of A and B is 5:3. In a race, A gives B a head-start of 40 m. After how much distance from the starting point of A, do they both meet?

- a) 100 m
- b) 120 m
- c) 150 m
- d) 200 m

**Q8:** Speed of A is 150% of speed of B, who can cover 48 km in 2 hours 24 minutes. If A starts a journey of 120 km at 5:00 pm, in which he takes rest for 2 times before reaching the destination, each 20 minutes, at what time will he reach the destination?

- a) 9:00 pm
- b) 9:15 pm
- c) 9:20 pm
- d) 9:40 pm

# 7. Time Speed & Distance

**Q9:** A boat covers 80 km upstream in 10 hours, and 60 km downstream in 6 hours. What is the time taken for the boat to travel 90 km in still water?

- a) 10 hours
- b) 9 hours
- c) 12 hours
- d) 18 hours

**Q10:** By travelling at 1 kmph less than the usual speed, a man takes 5 hours more to reach the destination. If he increases the speed by 1 kmph, he will reach the destination 4 hours early. What is the distance covered by him?

- a) 300 km
- b) 330 km
- c) 360 km
- d) 390 km



**Q11:** A train starts at 6:00 am from station X towards station Y at a speed of 40 kmph. Once every 2 hours, the train increases its speed by 5 kmph. At what time it will reach station Y which is 800 km away from station X?

- a) 8:00 pm
- b) 8:12 pm
- c) 8:24 pm
- d) 8:40 pm

**Q12:** Kunal and Leela are 360 m away from each other. If they start moving towards each other at the same time, they will meet after 30 seconds. If they move in the same direction, Kunal will meet Leela in 3 minutes. What is slower compared to the other person and what is that person's speed?

- a) Leela, 20 mps
- b) Kunal, 15 mps
- c) Kunal, 10 mps
- d) Leela, 5 mps

**Q13:** Distance covered by a boat upstream in certain time is equal to 4 times the distance covered by the boat downstream in the same time. If the speed of the river is 9 kmph, what is the time taken by the boat to cover 72 km downstream?

- a) 3 hours
- b) 4 hours
- c) 6 hours
- d) 8 hours

**Q14:** Aman leaves his house at 6:00 am and moves towards east with a constant speed. Binny leaves the same house at 9:00 am at a speed of 35 kmph and meets Aman at 1:00 pm. What is the speed of Aman?

- a) 12 kmph
- b) 15 kmph
- c) 20 kmph
- d) 30 kmph

**Q15:** Manju covers each quarter of the distance at speeds 10 kmph, 20 kmph, 30 kmph and 40 kmph, respectively. What is her average speed for the journey?

- a) 25 kmph
- b) 19.2 kmph
- c) 20 kmph
- d) 30 kmph

# 8. Mensuration

**Q1:** A rectangular plot of area  $605 \text{ m}^2$  is divided into 5 equal squares along its length. If the perimeter of the rectangle is same as the circumference of a circle, what is the area of the circle? (consider  $\pi = \frac{22}{7}$ )

- a)  $1428 \text{ m}^2$       b)  $1386 \text{ m}^2$   
c)  $1280 \text{ m}^2$       d)  $1072 \text{ m}^2$

**Q2:** To create a logo, an artist first draws a circle inside a square. Diameter of a circle is equal to the side of the square. The artist wants to create a logo where the portion outside the circle but inside the square is shaded, and sector with arc length  $5.5 \text{ cm}$  is shaded. If the area of the square is  $196 \text{ cm}^2$ , the area of the shaded portion is what fraction of the total area of the logo?

- a) 0.3125      b) 0.2856  
c) 0.2225      d) 0.3750



**Q3:** Curved surface area of a solid cylinder of height  $15 \text{ cm}$  is three times its base area. What is the volume of the cylinder?

- a)  $1000\pi \text{ cm}^3$       b)  $1200\pi \text{ cm}^3$   
c)  $1250\pi \text{ cm}^3$       d)  $1500\pi \text{ cm}^3$

**Q4:** Kalyan owns a rectangular plot. The shortest distance from one corner to the diagonally opposite corner is  $255 \text{ m}$ . Perimeter of the plot is  $690 \text{ m}$ . What is the area of the plot?

- a)  $27000 \text{ m}^2$       b)  $36000 \text{ m}^2$   
c)  $15000 \text{ m}^2$       d)  $18000 \text{ m}^2$

**Q5:** Arc length of a sector of a circle is one-twelfth of the circumference of the circle. If the area of the sector is  $25 \text{ cm}^2$ , what is the area of the circle?

- a)  $225 \text{ cm}^2$       b)  $250 \text{ cm}^2$   
c)  $300 \text{ cm}^2$       d)  $360 \text{ cm}^2$

**Q6:** Curved surface area of a hemisphere is 40 times the surface area of a sphere with radius  $2 \text{ cm}$ . What is the volume of the hemisphere?

- a)  $\frac{5120\sqrt{5}\pi}{3}$       b)  $\frac{2560\sqrt{5}\pi}{3}$   
c)  $\frac{1280\sqrt{5}\pi}{3}$       d)  $\frac{640\sqrt{5}\pi}{3}$

**Q7:** A sphere with radius  $r$ , and a cone with base radius  $2r$  and height  $r$ , are melted together and made into a hemisphere with radius  $R$ . What is the value of  $\frac{R}{r}$ ?

- a)  $\sqrt[2]{8}$       b)  $\sqrt[3]{16}$   
c) 4      d)  $\sqrt[3]{4}$

**Q8:** Surface area of a sphere is  $324\pi \text{ cm}^2$ . If the sphere is melted and made into a cylindrical disc with a thickness of  $3 \text{ cm}$ , what will be the total surface area of the cylinder?

- a)  $972\pi \text{ cm}^2$       b)  $486\pi \text{ cm}^2$   
c)  $756\pi \text{ cm}^2$       d)  $648\pi \text{ cm}^2$

# 8. Mensuration

**Q9:** Side measure of a square is increased by 40%. What is the percentage increase in the area of the square?

- a) 80%
- b) 96%
- c) 44%
- d) 20%

**Q10:** A 20 cm high hollow cylinder with thickness 2 cm and inner radius 8 cm is melted and made into  $n$  number of spheres with radius  $3\sqrt[3]{2}$  cm. Find the value of  $n$ .

- a) 10
- b) 20
- c) 30
- d) 40

**Q11:** Curved surface area of cone is  $880 \text{ cm}^2$ , and the base area is  $616 \text{ cm}^2$ . Height of the cone is between:

- a) 24 and 25 cm
- b) 25 and 26 cm
- c) 23 and 24 cm
- d) 22 and 23 cm



**Q12:** What is the area of a trapezium with measures of the parallel sides being 20 cm and 35 cm and the height is same as the diameter of a circle whose area is  $16\pi$ ?

- a)  $200 \text{ cm}^2$
- b)  $220 \text{ cm}^2$
- c)  $240 \text{ cm}^2$
- d)  $250 \text{ cm}^2$

**Q13:** Two parallel sides of a trapezium measure 50 cm and 80 cm. The two non parallel sides measure 25 cm each. What is the area of the trapezium?

- a)  $1300 \text{ cm}^2$
- b)  $1200 \text{ cm}^2$
- c)  $1100 \text{ cm}^2$
- d)  $1000 \text{ cm}^2$

**Q14:** Base area of a right circular cone is  $625\pi \text{ cm}^2$ . Volume of the cone is  $12500 \text{ cm}^3$ . What is the curved surface area of the cone?

- a)  $1525\pi \text{ cm}^2$
- b)  $1625\pi \text{ cm}^2$
- c)  $1725\pi \text{ cm}^2$
- d)  $1825\pi \text{ cm}^2$

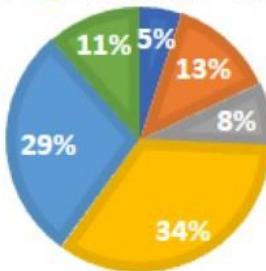
**Q15:** Area of a rectangle is  $240 \text{ cm}^2$ , and the perimeter is 76 cm. What is the diagonal measure of a square whose side measure is twice the width of the rectangle?

- a)  $12\sqrt{2}$
- b)  $15\sqrt{2}$
- c)  $16\sqrt{2}$
- d)  $18\sqrt{2}$

# 9. Data Interpretation

**Q1:** The following pie-chart represents the funds released by an organization to its various departments. A total of Rs. 12,00,00,000 was funded. What is the difference between the funds received by HR department and Operations department?

■ HR ■ Sales ■ Promotion ■ Production ■ Operations ■ Customer Care



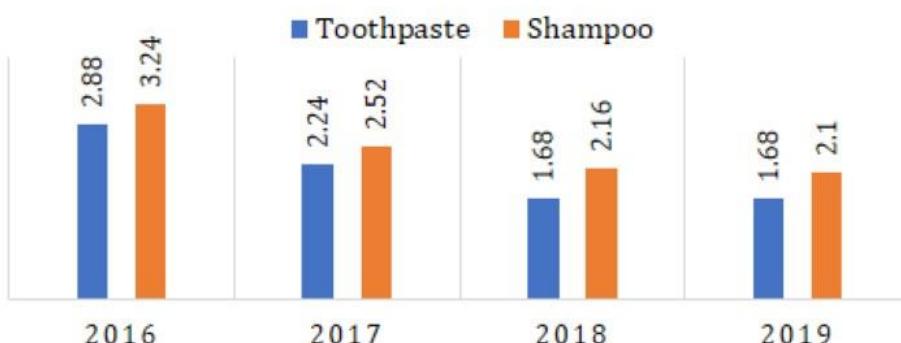
- a) 28800000  
b) 14400000  
c) 45200000  
d) 57600000

**Q2:** The table represents the expenses made by few food delivery agents for petrol over the period of 4 months. The expenses made by which of these agents is almost consistent?

	Anand	Babu	Charan	David
April	4899	5856	4756	4269
May	4785	5896	4852	4163
June	4817	5877	4801	4211
July	4753	5798	4849	4322

- a) Anand  
b) Babu  
c) Charan  
d) David

**Q3:** The chart represents profit obtained for two different products manufactured by a company in 4 consecutive years. In which year, the profit obtained for shampoo is 25% more than the profit obtained for toothpaste? (Profit values are multiples of millions)



- a) 2016  
b) 2017  
c) 2018  
d) 2019

## 9. Data Interpretation

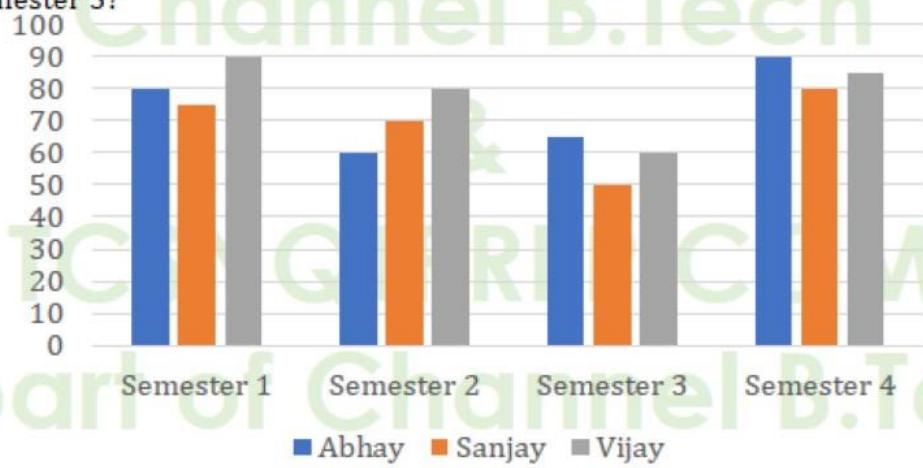
**Q4:** The table below represents the price of 4 products A, B, C and D purchased by P, Q and R. The weightage of the number of products from each are 3, 2, 1 and 1 respectively. The average amount spent by Q on B and C is approximately what percentage of the average amount spent by P and R on A?



	A	B	C	D
P	5	3	8	2
Q	2	3	5	4
R	6	2	5	4



**Q5:** Marks scored by 3 students in 4 different semesters is mentioned in the chart. Total marks scored by them in semester 4 is what percentage more than the total marks scored by them in semester 3?






**Q6:** Commission given to 2 employees over the period of 5 months is given in the chart. In which month, the percentage of commission given to Rajesh compared to the commission given to Rakesh is too low?



- a) Jan
  - c) Mar

## 9. Data Interpretation

**Q7:** The table below represents the number of students who attended the online classes over a period of 10 days. What is the ratio between the average attendance of the 4 days with top 4 values, and the average attendance of the least 4 values?

Day	1	2	3	4	5	6	7	8	9	10
Attendance	52	56	58	64	26	48	36	50	20	44



**Q8:** A canteen owner invests (I) on the essentials every morning and at the end of the night he counts the amount he received (R) through sales. The values if (I) and (R) from Monday to Friday are mentioned in the chart (in multiples of 100). What is the profit obtained by him in these days?



- a) Rs. 2100      b) Rs. 1800  
c) Rs. 1500      d) Rs. 1200

**Q9:** The graph shows the average marks (out of 100) scored by 5 students in Programming test. By what percentage is the score of the student with the highest mark less than the total score of the two students with the least marks?



# 9. Data Interpretation

**Q10:** The chart below represents the number of tourists (in lakhs) who visited Goa during a period of 8 years. What is the percentage increase in tourists in 2018 compared to 2014?



- a) 33.33%      b) 40%  
c) 16%      d) 32%



**Q11:** The table below represents the monthly expenses made by a family over the period of 5 months on different aspects. If the monthly income of the family is Rs. 64000, what percentage of the total salary of 5 months did they spend on transport and entertainment in these 5 months?

	Rent	Food	Transport	Entertainment
July	12000	8500	4200	800
August	12000	6800	3600	750
September	12000	7500	2500	600
October	12000	9000	3300	550
November	12000	6900	4000	500

- a) 6%      b) 6.5%  
c) 7%      d) 7.5%

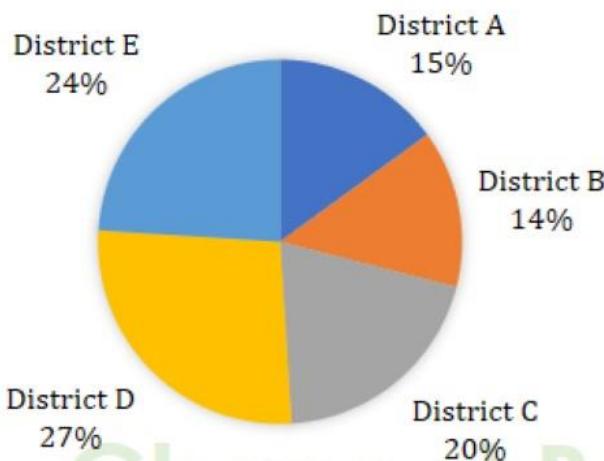
**Q12:** The table below represents the marks scored by three students in five subjects. What is the percentage of the total marks scored by Amar in Physics and chemistry compared to the total marks scored by Azar and Azad in Math, History and English?

	English	History	Math	Physics	Chemistry
Amar	65	50	85	80	91
Azar	52	66	98	85	70
Azad	60	78	96	81	84

- a) 32%      b) 35%  
c) 38%      d) 42%

# 9. Data Interpretation

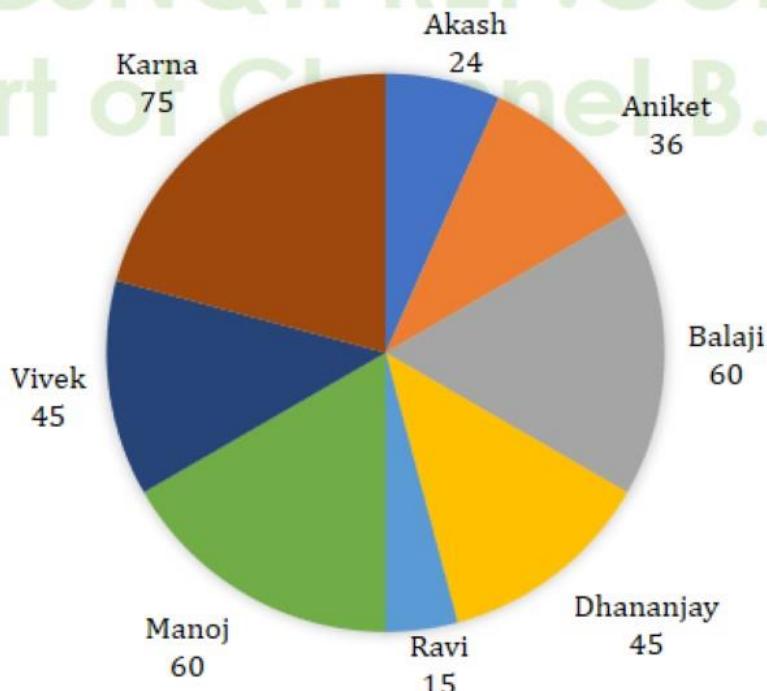
**Q13:** The pie-chart represents the distribution of 20000 college students from 5 different districts. The table represents the percentage of students who joined in engineering colleges from each district. What is the difference between number of engineering students from district A and the total number of non-engineering students from districts C and D?



District	%
A	45
B	50
C	60
D	80
E	75

- a) 1660  
b) 1550  
c) 1440  
d) 1330

**Q14:** A farmer distributes his farmland to his 8 sons as shown in the pie-chart (the values are the central angle made by each sector). If Ravi gets 4.5 acres of land, what is the total area of land given to Manoj, Vivek and Dhananjay?



- a) 45 acres  
b) 150 acres  
c) 90 acres  
d) 75 acres

## 9. Data Interpretation

**Q15:** The table below represents the weight of onions bought and the weight of onions sold by a vendor on a daily basis for 4 days. If he marks up the price of the onions by 20%, what is the profit/loss percentage obtained by him at the end of 5 days?

(He cannot sell the remaining onions in the future, and he did not have any onions before he bought them on the first day).

Day	1	2	3	4	5
Weight bought (in kg)	45	25	40	30	60
Weight sold (in kg)	15	20	65	40	50

- a) 28% profit
- c) 14% loss

- b) 28% loss
- d) 14% profit



Channel B.Tech  
&  
TCSNQTPREP.COM  
(a part of Channel B.Tech)

# 10. Number Systems

**Q1:** LCM of 320 and 256 is represented as  $160x + 128y$ . What is the sum of  $x$  and  $y$ ?

- a) 9
- b) 12
- c) 15
- d) 18

**Q2:** The 6 digit number 2#45#2 is divisible by 18. How many different values can be substituted in the place of #?

- a) None
- b) 1
- c) 2
- d) 3



**Q3:** The HCF of two numbers is 15 and their LCM is 150. How many such pairs of numbers are there?

- a) 3
- b) 2
- c) 1
- d) None

**Q4:** When you divide a number successively by the prime number factors of 385, from largest to smallest, the remainders obtained are 3, 1 and 3. What will be the remainder if the least of all possible numbers is divided by the second largest composite factor of 385?

- a) 14
- b) 15
- c) 16
- d) 18

**Q5:** Inside a rectangle of length 45 m and width 21 m, squares should be drawn. What is the least number of squares can be drawn so that the total area of all the squares is equal to the area of rectangle?

- a) 945
- b) 105
- c) 315
- c) 525

**Q6:** Sum of two numbers is 396 and the HCF of these two numbers is 36. What is the largest possible difference between the two numbers?

- a) 395
- b) 360
- c) 324
- d) 288

**Q7:** By dividing a number by 36, the remainder is 24. What is the smallest number by which the number should be multiplied so that there will not be a remainder when the result is divided by 36?

- a) 2
- b) 3
- c) 4
- d) 5

**Q8:** A number ( $N$ ) when divided by 7, 8 and 9 leaves remainder 1 in each case. When the number is divided by 107, the remainder is 0. What is the smallest possible value of  $N$ ?

- a) 505
- b) 1009
- c) 1513
- d) 2017

**Q9:** What is the largest 4-digit number when divided by 6, 8 and 15, leaves remainder 3 in each case?

- a) 9863
- b) 9963
- c) 9603
- d) 9723

# 10. Number Systems

**Q10:** The remainder obtained when the numbers 256, 307, 375 and 409 by  $x$  is same in each case. What is the sum of the largest possible value of  $x$  and the remainder?

- a) 35
- b) 52
- c) 18
- d) 17



**Q11:** There are  $N$  number of soldiers in a battalion. If they are arranged so that there are 55 soldiers in a row, the last row will have 50 soldiers. If they are arranged so that there are 60 soldiers in a row, the last row will have 55 soldiers. What is the least possible value of  $N$ ?

- a) 1320
- b) 660
- c) 665
- d) 655

**Q12:** What is the smallest number by which 33245 should be added so that it is divisible by 3, 4, 5 and 8?

- a) 5
- b) 115
- c) 15
- d) 105

**Q13:** Which of the following numbers is divisible by 88?

- a) 9946
- b) 11970
- c) 11178
- d) 13728

**Q14:** A number when divided by 42, leaves remainder 8. What is the remainder when twice the number is divided by 28?

- a) 2
- b) 4
- c) 16
- d) 8

**Q15:** What is the smallest number by which 2880 should be multiplied so that the result becomes a perfect square?

- a) 4
- b) 2
- c) 3
- d) 5