

Case Study Based Questions

Class – VII

Subject – Mathematics

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Chapter 1: Large Numbers Around Us

Case Study 1



The students of **Navodaya Vidyalaya** visited a **National Biodiversity Exhibition**. They observed many interesting facts about large numbers.

- About **1,25,000** people visited the exhibition in one week.
- The organisers printed **1,30,000** entry tickets.
- A seed bank displayed **95,000** indigenous seeds.
- The exhibition collected **₹12,75,450** as ticket revenue.
- One volunteer estimated that if **250 visitors entered every minute**, more than **3,50,000 visitors** could enter in a day.

Read the information carefully and answer the following questions.

Q1. How many more tickets were printed than the number of visitors?

- A. 4,000 B. 5,000 C. 6,000 D. 7,500

Q2. The ticket revenue ₹12,75,450 is written correctly in words as

- A. Twelve crore seventy-five thousand four hundred fifty
B. Twelve lakh seventy-five thousand four hundred fifty
C. One crore twenty-seven lakh fifty-four thousand
D. One lakh twenty-seven thousand four hundred fifty

Q3. If visitors continue to enter at the rate of 250 visitors per minute, approximately how many visitors can enter in 24 hours?

- A. 2,40,000 B. 3,00,000 C. 3,60,000 D. 4,20,000

4. The seed bank currently has **95,000** indigenous seeds. If it collects **750 seeds every day**, after **one week (7 days)** will the collection cross **one lakh**?

- A. Yes, because the total becomes 1,00,250. B. No, because the total becomes 99,250.
C. Yes, because the total becomes 1,02,500. D. No, because the total becomes 98,750.

Q5. The organisers want to arrange visitors into equal groups of **100 people** for guided tours.

How many complete groups can be formed from **1,25,000 visitors**?

- A. 125 B. 1,250 C. 12,500 D. 125,000

Answer Key:

1. **B** 2. **B** 3. **C** 4. **A** 5. **B**

Case Study 2



The students of **Class VII** visited the **Statue of Unity** during an educational tour. Their teacher shared the following facts:

- The Statue of Unity is **180 metres** tall.
- Somu's school building is approximately **40 metres** tall.
- Around **1,08,500** tourists visited the statue during a festival week.
- The authorities expected **1,20,000** visitors and made arrangements accordingly.
- Each ticket costs **₹250**.

Read the information carefully and answer the following questions.

Q1. Approximately how many times taller is the Statue of Unity than Somu's building?

- A. 3 B. 4.5 C. 5 D. 6

Q2. How many fewer visitors came than expected?

- A. 10,500 B. 11,500 C. 12,500 D. 13,500

Q3. The number 1,08, 500 is correctly written in words as

- A. One lakh eight thousand fifty B. One lakh eight thousand five hundred
C. One lakh eighty thousand five hundred D. Ten lakh eight thousand five hundred

Q4. If every visitor purchased one ticket costing ₹250, what was the total ticket collection?

- A. ₹2,71,25,000 B. ₹27,12,500 C. ₹2,70,00,000 D. ₹25,71,250

Q5. If another 12,000 visitors arrive the next day, the total number of visitors becomes

- A. 1,18,500 B. 1,19,500 C. 1,20,500 D. 1,21,500

Answer Key

1. B 2. B 3. B 4. A 5. C

Case Study 3



A seed conservation centre preserves different varieties of seeds.

- It currently stores **98,750** seed packets.
- Every month it receives **2,500** new packets.
- The centre aims to preserve **1 lakh** seed packets.
- During a workshop, **1,250** packets were distributed to farmers.

Read the information carefully and answer the following questions.

Q1. How many more seed packets are required to reach one lakh before distribution?

- A. 1,000 B. 1,150 C. 1,250 D. 1,500

Q2. After distributing 1,250 packets, how many packets remain?

- A. 96,500 B. 97,500 C. 97,250 D. 98,000

Q3. After receiving one month's new stock, the total number of packets becomes

- A. 99,750 B. 1,00,250 C. 1,01,250 D. 1,00,000

Q4. Which of the following numbers is nearest to one lakh?

- A. 98,750 B. 99,800 C. 97,900 D. 96,500

Q5. If the centre continues receiving 2,500 packets every month, after how many months will the stock first exceed 1,10,000 packets, assuming no further distribution?

- A. 3 B. 4 C. 5 D. 6

Answer Key

1. C 2. B 3. D 4. B 5. C
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Case Study 4



A public library organised a **Reading Festival**.

- The library has **3,25,450** books.
- During the year, **24,550** new books were added.
- About **15,000** books were issued during one month.
- Nearly **98,000** students visited the library during the year.

Read the information carefully and answer the following questions.

Q1. After adding new books, the total number of books becomes

- A. 3,40,000 B. 3,50,000 C. 3,49,000 D. 3,51,000

Q2. Which number is correctly written in the Indian place value system?

- A. 325450 B. 3,254,50 C. 3,25,450 D. 32,54,50

Q3. The number 3,25,450 is read as

- A. Three lakh twenty-five thousand four hundred fifty
B. Thirty-two lakh fifty-four thousand fifty
C. Three lakh twenty-five hundred forty-five
D. Three crore twenty-five thousand four hundred fifty

Q4. Approximately how many books remained in the library after issuing 15,000 books?

- A. 3,10,450 B. 3,35,000 C. 3,49,000 D. 3,25,450

Q5. If the library adds 5,000 books every year, after how many years will its collection first exceed 3,75,000 books?

- A. 4 B. 5 C. 6 D. 7

Answer Key

1. B 2. C 3. A 4. B 5. C

Case Study 5



During a **science exhibition**, students prepared a model showing the Earth–Moon distance.

- Distance from Earth to Moon = **3,84,400 km**
- A spacecraft travels **800 km every hour**.
- One student estimated that travelling **100 km every day** would take many years.
- The model was viewed by **1,15,000** visitors.

Read the information carefully and answer the following questions.

Q1. The number 3,84,400 is read as

- | | |
|---|-------------------------------------|
| A. Three lakh eighty-four thousand four hundred | B. Thirty-eight lakh forty thousand |
| C. Three lakh forty-eight thousand four hundred | D. Three crore eighty-four thousand |

Q2. At 800 km per hour, approximately how many hours are needed to reach the Moon?

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|--------|--------|--------|--------|
| A. 420 | B. 460 | C. 480 | D. 500 |
|--------|--------|--------|--------|

Q3. The number of visitors in words is

- | | |
|-------------------------------|--------------------------------|
| A. One lakh fifteen thousand | B. Eleven lakh five thousand |
| C. One crore fifteen thousand | D. One lakh fifty-one thousand |

Q4. If 5,000 more visitors arrive, the total becomes

- | | | | |
|-------------|-------------|-------------|-------------|
| A. 1,10,000 | B. 1,20,000 | C. 1,15,500 | D. 1,25,000 |
|-------------|-------------|-------------|-------------|

Q5. If a person travels 100 km every day, approximately how many days will it take to reach the Moon?

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|----------|----------|----------|----------|
| A. 3,440 | B. 3,644 | C. 3,844 | D. 4,000 |
|----------|----------|----------|----------|

Answer Key

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|------|------|------|------|------|
| 1. A | 2. C | 3. A | 4. B | 5. C |
|------|------|------|------|------|

Case Study 6

Context: A mega solar power plant in Rajasthan is helping transition India to green energy.

- The plant generates **4,50,000 Kilowatt-hours (kWh)** of electricity daily.
- The operators aim to upgrade the plant's daily generation to **1 million kWh** (International System).
- It has installed **18,500 solar panels** so far.
- The setup cost of a single new solar sector at the plant is **₹48,75,300**.

Read the information carefully and answer the following questions:

Q1. The setup cost of ₹48,75,300 is written correctly in words according to the Indian place value system as: A. Forty-eight lakh seventy-five thousand three hundred B. Four crore eight lakh

seventy-five thousand three hundred C. Forty-eight lakh seventy-five thousand thirty D. Four lakh eighty-seven thousand five hundred thirty

Q2. How much more electricity (in Kilowatt-hours) is needed daily to reach the target capacity of 1 million kWh? (Hint: 1 million = 10,00,000) A. 5,50,000 kWh B. 6,50,000 kWh C. 4,50,000 kWh D. 5,00,000 kWh

Q3. If the solar plant is able to install more panels and each panel generates exactly 20 kWh of electricity per day, how much electricity will 18,500 panels generate in total daily? A. 3,70,000 kWh B. 3,80,000 kWh ... C. 3,90,000 kWh D. 4,00,000 kWh

Q4. The setup cost of ₹48,75,300, when rounded off to the nearest lakh, is: A. ₹48,00,000 B. ₹49,00,000 C. ₹50,00,000 D. ₹48,80,000

Q5. The current daily generation of 4,50,000 kWh is written in the International Place Value system as: A. 4.5 Million B. 450 Thousand C. 45 Million D. 4,500 Thousand

• **Answer Key:**

1. A

2. A

3. A

4. B

5. B

Case Study 7

Context: A national high-tech e-sports gaming championship was hosted in Bengaluru.

- The live stream of the grand finale was watched by **2,45,000 concurrent viewers**.
- The streaming servers consumed a total of **15,24,650 Megabytes (MB)** of internet data.
- A total of **2,50,000 player registrations** were received, but only **12,500 players** qualified for the actual tournament.
- The total prize pool distributed was **₹75,00,000**.

Read the information carefully and answer the following questions:

Q1. How many registered players failed to qualify for the tournament? A. 2,37,500 B. 2,38,500 C. 2,47,500 D. 2,35,000

Q2. The total internet data consumed, 15,24,650 MB, is written correctly in words according to the Indian system as: A. Fifteen million twenty-four thousand six hundred fifty MB B. One crore fifty-two lakh forty-six thousand fifty MB C. Fifteen lakh twenty-four thousand six hundred fifty MB D. One lakh fifty-two thousand four hundred sixty-five MB

Q3. If the total prize pool of ₹75,00,000 is shared equally among the top 15 final ranking players, how much prize money does each winner receive? A. ₹5,00,000 B. ₹50,000 C. ₹1,50,000 D. ₹7,50,000

Q4. The number of concurrent viewers, 2,45,000, is written in words in the International system as: A. Two lakh forty-five thousand B. Two hundred forty-five thousand C. Two million forty-five thousand D. Twenty-four lakh fifty thousand

Q5. Round off the total internet data consumed (15,24,650 MB) to the nearest thousand: A. 15,24,000 MB B. 15,25,000 MB C. 15,20,000 MB D. 15,30,000 MB

• **Answer Key:**

1. A

2. C

3. A

4. B

5. B

Case Study 8

Context: A regional warehouse of the Food Corporation of India (FCI) handles bulk grains for national storage.

- The warehouse currently stores **8,75,400 bags** of wheat and **6,24,600 bags** of rice.
- Each standard bag of grain weighs exactly **50 kg**.
- During a seasonal relief programme, the warehouse dispatched **2,50,000 bags** of wheat and **1,50,000 bags** of rice to adjacent districts.
- The supervisor wants to increase the capacity of the silos to hold a total of **20,00,000 bags** of grain.

Read the information carefully and answer the following questions:

Q1. What is the total number of grain bags (wheat and rice combined) initially stored in the warehouse? A. 14,00,000 B. 15,00,000 C. 16,00,000 D. 15,50,000

Q2. After dispatching the relief bags, what is the total number of remaining bags left in the warehouse? A. 11,00,000 B. 10,00,000 C. 12,00,000 D. 11,50,000

Q3. What is the total weight of the remaining rice bags in kilograms? (*Hint: First find the remaining rice bags*) A. 2,37,30,000 kg B. 2,50,00,000 kg C. 2,00,00,000 kg D. 3,12,30,000 kg

Q4. How many more grain bags must be brought in to fill the warehouse up to its upgraded target capacity of 20,00,000 bags? (*Hint: Compare against the total initial bags stored*) A. 4,00,000 bags B. 5,00,000 bags C. 6,00,000 bags D. 4,50,000 bags

Q5. The initial wheat bag count of 8,75,400 can be written in expanded form as: A. $8 \times 1,00,000 + 7 \times 10,000 + 5 \times 1,000 + 4 \times 100$ B. $8 \times 10,00,000 + 7 \times 10,000 + 5 \times 1,000 + 4 \times 100$ C. $8 \times 1,00,000 + 7 \times 1,000 + 5 \times 100 + 4 \times 10$ D. $8 \times 1,00,000 + 7 \times 10,000 + 5 \times 100 + 4 \times 1$

• **Answer Key:**

1. B

2. A

3. A

4. B

5. A

Case Study 9

Context: A deep-space antenna arrays ground station is tracking a spacecraft orbiting the Moon.

- The lunar satellite orbits the Moon at an altitude of **1,20,000 metres**.
- Over a year, the satellite transmitted **3,56,800 high-resolution images** of the lunar surface.
- Each image data file is exactly **40 Megabytes (MB)** in size.
- The tracking station has a daily operating cost of **₹1,25,500**.

Read the information carefully and answer the following questions:

Q1. What is the height of the satellite's orbit written in kilometres (km)? (*Hint: 1,000 m = 1 km*) A. 12 km B. 120 km C. 1,200 km D. 12,000 km

Q2. The tracking station's daily operating cost of ₹1,25,500 is written correctly in words as: A. Twelve lakh twenty-five thousand five hundred rupees B. One lakh twenty-five thousand five hundred rupees C. One lakh twenty-five thousand fifty rupees D. Twelve lakh five thousand five hundred rupees

Q3. Write the total number of images (3,56,800) in the International Place Value system with correct commas: A. 3,56,800 B. 356,800 C. 35,68,00 D. 356,8,00

Q4. If the operating cost remains constant, what is the total cost of running the tracking station for one week (7 days)? A. ₹8,78,500 B. ₹8,75,000 C. ₹8,75,500 D. ₹8,50,500

Q5. Rounding off the total number of high-resolution images (3,56,800) to the nearest thousand gives: A. 3,56,000 B. 3,57,000 C. 3,50,000 D. 3,60,000

• **Answer Key:**

1. B

2. B

3. B

4. A

5. B

Case Study 10

Context: A national printing trust produces textbooks for secondary schools.

- It printed **14,25,000 copies** of the Class VII Mathematics textbook.
- The trust packs textbooks into boxes. Each box fits exactly **100 textbooks**.
- The material cost for one textbook is **₹45**, and the printing process cost is **₹35**.
- Out of the total copies, **12,80,000 textbooks** have been successfully distributed across state districts.

Read the information carefully and answer the following questions:

Q1. How many complete boxes of textbooks can be packed using the 14,25,000 printed copies?

A. 1,425 B. 14,250 C. 1,42,500 D. 14,25,000

Q2. What is the total production cost (material cost + printing cost) for a single textbook? A.

₹75 B. ₹80 C. ₹90 D. ₹100

Q3. How many textbooks are left in the storage facility after distributing the 12,80,000 copies?

A. 1,45,000 B. 1,55,000 C. 2,45,000 D. 1,25,000

Q4. The number of distributed textbooks (12,80,000) is written in words according to the Indian system as: A. Twelve lakh eighty thousand B. Twelve crore eighty thousand C. One crore twenty-eight thousand D. Twelve lakh eight thousand

Q5. The total copies printed (14,25,000), when rounded off to the nearest lakh, is: A. 14,00,000

B. 15,00,000 C. 14,30,000 D. 14,20,000

• **Answer Key:**

1. B

2. B

3. A

4. A

5. A