

## Section I. Quantitative Skills

### Question 1

The integers 1, 2 ... 40 are written on the blackboard. The following operation is then repeated 39 times. In each repetition, any two numbers, say  $a$  and  $b$ , currently on the blackboard are erased and a new number  $a + b - 1$  is written. What will be the number left on the board at the end?

- A. 780
- B. 781
- C. 819
- D. 820
- E. 821

### Question 2

How many 4-digit numbers of the form AB61 are there that are divisible by 11 (where A and B are distinct digits)?

- A. 3
- B. 4
- C. 7
- D. 13
- E. 14

**Question 3**

Sumeet spends 10% of his salary on his child's education, 20% of the remainder on rent and 25% of the balance on garments. Finally, he is left with \$ 5,400. What is his salary?

- A. \$ 10,000
- B. \$ 11,000
- C. \$ 12,000
- D. \$ 13,000
- E. \$ 14,000

**Question 4**

A dishonest dealer claims to sell his goods at 20% discount, but uses a weight of 800 grams for weighing 1 kilogram of goods. What is the profit or loss being made by the dealer?

- A. 40% loss
- B. 5% loss
- C. No profit or loss
- D. 5% profit
- E. 10% profit

**Question 5**

Given the quadratic equation  $x^2 - (A - 3)x - (A - 7) = 0$ , for what value of  $A$  is the sum of squares of the roots 0?

- A. -2
- B. 3
- C. 5
- D. 10
- E. 13

**Question 6**

The vice-chancellor of ABC University decided to form a committee to look into the feasibility of introduction of semester systems at the undergraduate level. Five members from the Executive Council and 7 members from the Academic Council were found to be suitable for the job. In how many ways can the vice-chancellor form the committee of 6 members such that at least 4 members of the committee belong to the Academic Council?

- A. 350
- B. 420
- C. 455
- D. 456
- E. 462

**Question 7**

**Directions:** Go through the given table and solve the questions based on it.

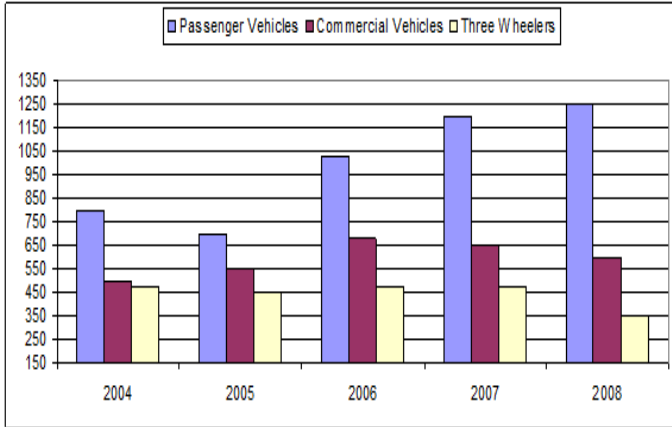
State	Total Population (in Lakhs)		Male Population (in Lakhs)		Rural Population (%)		Area (In Sq. Km)
	2001	2006	2001	2006	2001	2006	
Uttar Pradesh	1660	1731	875	911	71	70	2,38,576
Madhya Pradesh	603	674	314	360	72	71	3,08,144
Andhra Pradesh	761	823	385	417	69	68	2,75,068
Tamil Nadu	624	697	315	348	70	67	1,30,058
Orissa	368	384	186	195	73	72	1,55,707
Maharashtra	968	1013	504	527	68	66	3,07,713
West Bengal	802	865	412	446	69	68	88,752

- What is the percentage increase in the female population in Uttar Pradesh from 2001 to 2006?
  - A. 3.6%
  - B. 4%
  - C. 4.2%
  - D. 4.3%
  - E. 4.5%
  
- In which of the following states is the number of males per square metre the least in 2006?
  - A. Uttar Pradesh
  - B. Madhya Pradesh
  - C. Andhra Pradesh
  - D. Tamil Nadu
  - E. Orissa
  
- What is the simple annual growth rate (SAGR) of the female population in Uttar Pradesh from 2001 to 2006?
  - A. 0.68%
  - B. 0.74%
  - C. 0.82%
  - D. 0.89%
  - E. 1.11%
  
- What is the average percentage of rural population in the given states in the year 2001?
  - A. 68.12%
  - B. 68.85%
  - C. 69.12%
  - D. 70.28%
  - E. 71.36%

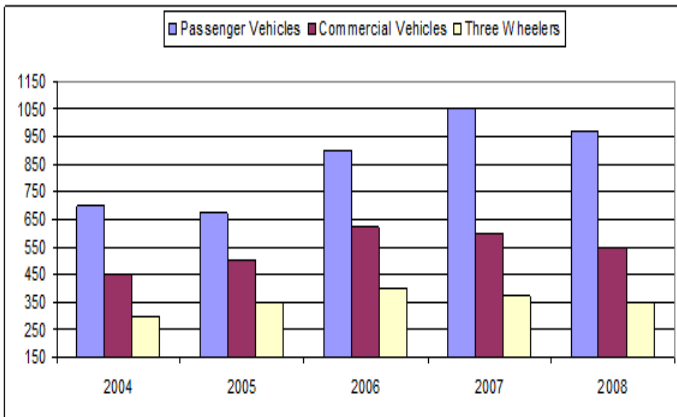
**Question 8**

**Directions:** Go through the given graphs and solve the questions based on them.

**Automobile Production Trends**



**Automobile Domestic Sales Trends**



- Which of the following years exhibits the highest percentage decrease over the preceding year in automobile production?
  - A. 2004
  - B. 2005
  - C. 2006
  - D. 2007
  - E. 2008
  
- Assuming that whatever was not sold domestically was exported, which year registered max. growth in exports of automobiles?
  - A. 2004
  - B. 2005
  - C. 2006
  - D. 2007
  - E. 2008
  
- If the ratio of the domestic sale price of a commercial vehicle, a passenger vehicle, and a three-wheeler is 5 : 3 : 2, then approximately what percent of earnings is contributed by the commercial vehicle segment to the overall earnings from domestic sales during the period 2004–2008?
  - A. 11%
  - B. 27%
  - C. 45%
  - D. 47%
  - E. 52%
  
- The ratio between absolute increase in domestic sales over preceding year and absolute increase in production over the preceding year is highest during which year?
  - A. 2004
  - B. 2005
  - C. 2006
  - D. 2007
  - E. 2008

### Question 9

**Directions:** A question is followed by two statements, numbered (1) and (2). Using the information provided and general knowledge, decide whether the information given is sufficient to solve the problem.

Is  $x^2 - y^2$  even?

- (1)  $x + y$  is even.
- (2)  $x - y$  is odd.

- A. Statement (1) ALONE is sufficient, but statement (2) ALONE is not sufficient.
- B. Statement (2) ALONE is sufficient, but statement (1) ALONE is not sufficient.
- C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- D. EACH statement ALONE is sufficient.
- E. Statements (1) and (2) TOGETHER are NOT sufficient.