Quantitative Aptitude Practice questions on Set Theory and Calendars:

1. Set Fn gives all factors of n. Set Mn gives all multiples of n less than 1000. Which of the following statements is/are true?

i. F108∩F84=F12

ii. M12∪M18=M36

iii. M12∩M18=M36

iv. M12⊂(M6∩M4)

A. i, ii and iii only

B. i, iii and iv only

C. i and iii only

D. All statements are true

2. A′ is defined as the complement of A, as in, set of all elements that are part of the universal set but not in A. How many of the following have to be true?

i. n(A∪B)′=n(A′∩B′)

ii. If A∩B=0, then A′∪B′ is equal to the universal set

iii. If A∪B = universal set, then A′∩B′ should be the null set.

iv. If A⊂B then A′∪B′=(A∩B)′

A. 1

B. 2

C. 3

D. 4

3. Of 60 students in a class, anyone who has chosen to study maths elects to do physics as well. But no one does maths and chemistry, 16 do physics and chemistry. All the students do at least one of the three subjects and the number of people who do exactly one of the three is more than the number who do more than one of the three. What are the maximum and minimum number of people who could have done Chemistry only?

A. 40, 0

B. 28, 0

C. 38, 2

D. 44, 0

4. John was born on Feb 29th of 2012 which happened to be a Wednesday. If he lives to be 101 years old, how many birthdays would he celebrate on a Wednesday?

A. 3

B. 4

C. 5

D. 1

5. How many of the following statements have to be true?

i. No year can have 5 Sundays in the month of May and 5 Thursdays in the month of June.

ii. If Feb 14th of a certain year is a Friday, May 14th of the same year cannot be a Thursday

iii. If a year has 53 Sundays, it can have 5 Mondays in the month of May.

A. 0

B. 1

C. 2

D. 3

6. Set P comprises all multiples of 4 less than 500. Set Q comprises all odd multiples of 7 less than 500, Set R comprises all multiples of 6 less than 500. How many elements are present in PUQUR ?

A. 202

B. 243

C. 228

D. 186

7. 95% of the students in a class have taken Marketing, 80% have chosen Finance, 84% have chosen operations (ops), and 90% have chosen Human Resources (HR). What is the maximum and minimum percentage of people who have chosen all of the four?

A. 80% and 56%

B. 95% and 53%

C. 80% and 49%

D. 80% and 51%

8. Set A comprises all three digit numbers that are multiples of 5, Set B comprises all three–digit even numbers that are multiples of 3 and Set C comprises all three–digit numbers that are multiples of 4. How many elements are present in AUBUC?

A. 420

B. 405

C. 555

D. 480

Answer Key –

QA	1	2	3	4	5	6	7	8
ANS	B	D	D	B	B	A	C	A