**Question 1**

The following set A can be defined by a number of methods

A = {1,3,5,7,9…}

Which of the following four rules does not describe A.

1. {n : n is an odd integer}
2. {(-1)n : n0}
3. {2n-1: n and n>1}
4. {n+1: n and n0}

Correct answer: (b) This rule does not describe the members of set A.

**Question 2**

Insert or in the space blank to make the statement true.

{2, 4, 7, 9} \_\_\_\_\_\_\_\_ {2,4,5,7,9}

a) b)

Correct answer: (a) {2, 4, 7, 9}{2,4,5,7,9}

**Question 3**

Let B be the set of all letters used to spell the word "mathematics". What is the cardinality of B?

a) 9

b) 11

c) 10

d) 8

Correct Answer: (d) There are 8 distinct letters used to spell the word "mathematics". B = {m,a,t,h,e,i,c,s}

**Question 4**

The finite set C has the elements {u, v,w, x, y, z }. How many subsets of C are there?

a) 16

b)32

c)64

d) 128

Correct Answer: (c) There are 6 elements (so n=6) and so 26 = 64 possible subsets

**Question 5**

If the cardinality of set A is 10, the cardinality of B = 6, and the cardinality of is 2, then what is the cardinality of ?

a) 16

b) 18

c) 14

d) 30

Correct Answer: (c) There are 14 elements in AUB.

**Question 6**

If the cardinality of set A is 14, the cardinality of B = 9, and the cardinality of is 20, then what is the cardinality of ?

a) 5

b) 23

c) 43

d)3

Correct Answer: (d) There are 3 elements in AB.

**Question 7**

The set A = { x: x<3 and x > 5} is

1. an infinite set
2. a power set
3. a null set
4. a finite set

Correct Answer: (c) A null set. It is not possible for a value of x to be less than 3 and greater than 5.

**Question 8**

If F is the set {*x| x is a vowel, x is not "a" or "i"*} then F =

1. {a,e,i,o,u}
2. {a,i}
3. {e,u,o}
4. {e,u}

Correct answer: (c) The set of the remaining vowels.

**Question 9**

If D is any set, then (D/)/ is equal to

1. D/
2. D
3. The null set
4. U

Correct Answer: (b) (D/)/ = D

**Question 10**

In a class of 50 students, 24 enrolled for both Mathematics and Programming with 38 enrolled in the Programming class in total. If the students of the class enrolled for at least one of the two subjects, then how many students enrolled for the Mathematics class?

1. 12
2. 36
3. 26
4. 58

Correct Answer: (b) There is 36 students enrolled in the Mathematics class.

**Question 11**

In a class of 50 students, 24 enrolled for both Mathematics and Programming with 38 enrolled in the Programming class in total. If the students of the class enrolled for at least one of the two subjects, then how many students enrolled for **only** Mathematics (and not Programming)?

1. 12
2. 36
3. 24
4. 58

Correct Answer: (a) There is 12 students who are enrolled in the Mathematics class only.

**Question 12**

The set E = { 1,2,3,4,5}, which of the following statements is incorrect?

1. 5 E
2. {3,5} E
3. 3 E
4. {3}A

Correct answer: (c) 3 is an element of E, so the operator should be “

**Question 13**

Given that the universal U = {1,2,3,4,5,6,7,8,9} and A={1,3,5,7,9} , determine the A/ ( the complement of A).

a) {2,4,6,8}

b) {2,6,8}

c){1,3,5,6}

d){1,2,6,7}

Correct answer (a)

**Question 14**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine AUB

a) {1,2,3,4,6,7}

b) {2,4,6,8}

c) {1,2,3,5,7,9}

d){1,3,7}

Correct answer (c)

**Question 15**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine

a) {1,2,3,4,6,7}

b) {1,3,7}

c) {1,2,3,5,7,9}

d){1,2,5,9}

Correct answer (b)

**Question 16**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine /

a) {9}

b) {1,3,7}

c) {1,2,5,9}

d){ 4, 6 ,8}

Correct answer (a) / ={4, 6, 8, 9}

**Question 17**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine )/

a) { 2, 4 ,6, 8, 9}

b) {1,3,5,7}

c) {1,3,4,5,9}

d){ 1,3,7}

Correct answer (a)

**Question 18**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine

a) {6, 8, 9}

b) {1,3,7}

c) {1,3,4,5,9}

d){ 2,9}

Correct answer (d) ={2,9}

**Question 19**

Given that A={1,3,5,7,9} and B={1,2,3,5,7}, determine

a) {2,9}

b) {2,4,6,8}

c) {9}

d){ 2}

Correct answer (d) = {2}

**Question 20**

)/ is equivalent to which of the following, according to De Morgan’s Laws

1. AUB
2. A’UB’
3. )/
4. A/ B/

Correct Answer (b)