MIDTERM EXAMINATION
Spring 2010
MTH001- Elementary Mathematics

Ref No: 1335385
Time: 60 min
Marks: 40

Student Info

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Center:	**OPKST**
Exam Date:	**6/2/2010 12:00:00 AM**

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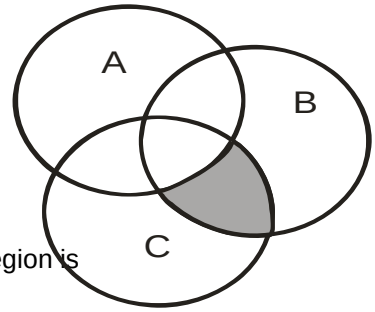
Q No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Marks									
Q No.	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	
Marks									
Q No.	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
Marks									
Q No.	**25**	**26**							
Marks									

Question No: 1 (Marks: 1) - Please choose one

Consider the following diagram



Then the shaded region is

- ► $A \cap B \cup C$
- ► $(A \cap B) - C$
- ► **$(B \cap C) - A$**
- ► $(A \cap C) - B$

Question No: 2 (Marks: 1) - Please choose one

For sets A and B, if $A \subseteq B$, then

- ► $A^c \cap B = A$
- ► $A \cup B = A$
- ► $A \cap B = A$

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Question No: 3 (Marks: 1) - Please choose one

If A = {1, 2, 3, 4} then A is proper subset of A.

- ► True
- ► False

Question No: 4 (Marks: 1) - Please choose one

$\{x\} \subseteq \{x\}$

- ► True
- ► False

Question No: 5 (Marks: 1) - Please choose one

If P and Q are proposition, P is true and Q is false, then $P \rightarrow Q$ is

- ► True
- ► False

Question No: 6 (Marks: 1) - Please choose one

$A \cap B$ is a ---------of A.

- ► super set
- ► subset
- ► complement set

Question No: 7 (Marks: 1) - Please choose one

In ordered pairs order of elements matters.

- ► True
- ► Flase

Question No: 8 (Marks: 1) - Please choose one

Let $a_1,a_2,a_3,\ldots,a_n$ be an arithmetic sequence, then sum of the sequence $S_n = \frac{n(a_1+a_n)}{2}$

- ► True
- ► False

Question No: 9 (Marks: 1) - Please choose one

If p is a proposition then its negation is denoted by

- ► $\wedge p$
- ► $\vee p$
- ► $\sim p$
- ► p'

Question No: 10 (Marks: 1) - Please choose one

Conjunction of two statements p and q is denoted by

- ► $p \wedge q$
- ► $p \vee q$
- ► $p \sim q$
- ► $p \rightarrow q$

Question No: 11 (Marks: 1) - Please choose one

Let A = {1, 2, 3} and B = {{1,2}, 3}
then $A \cup B$ = {1, 2, 3}

- ► True
- ► False

Question No: 12 (Marks: 1) - Please choose one

Percentage change =

- ► (Change / initial value) x 100
- ► (Change / final value) x 100

► (initial value / Change) x 100

► (final value / Change) x 100

Question No: 13 (Marks: 1) - Please choose one

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Initial value =	1200
Final value =	1500
increase=	300
% Change =	

► 30%

► 20%

► 100%

► 25%

Question No: 14 (Marks: 1) - Please choose one

Initial value =	120
Final value =	200
Increase =	80
% Change =	

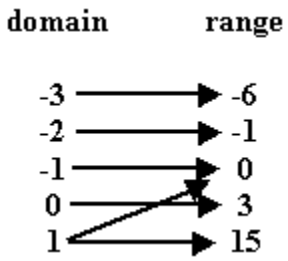
► **66.67%**

► 40%

► 22.5%

► 30%

Question No: 15 (Marks: 1) - Please choose one



The above relation shows _____.

- ► not a function
- ► one to one function
- ► **onto function**
- ► many to one function

Question No: 16 (Marks: 1) - Please choose one

The nth term of an A. P (Arithmetic Progression) is:

- ► **a + (n - 1) d**
- ► **a - (n - 1) d**
- ► **a - (n - 1) d**
- ► **a + (n + 1) d**

Question No: 17 (Marks: 1) - Please choose one

The nth term of an G. P (Geometric Progression) is:

► **ar^{n-1}**

► ar^{n+1}

► ra^{n-1}

► ra^{n+1}

Question No: 18 (Marks: 1) - Please choose one

From the truth table, *for $p \leftrightarrow q$ to be true, if both p and q must have the same truth values.*

► True

► **False**

Question No: 19 (Marks: 1) - Please choose one

Which of them is a statement?

► x+2 is positive

► Logic is interesting

► x+y=2

► May I come in?

Question No: 20 (Marks: 1) - Please choose one

The final statement is called…….
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► hypothesis

► assumption

► conclusion

► valid statement

Question No: 21 (Marks: 2)

A relation R on the set of Natural numbers N is defined as:
For all $a, b \in N$, a**R**b iff $a \times b$ is odd. Is R reflexive?

Question No: 22 (Marks: 2)

What percent of 36 is 5?

Question No: 23 (Marks: 3)

Let $f : \square \rightarrow \square$ be defined by

$f(x) = 2x - 3$

Show that f is an onto function.

Question No: 24 (Marks: 3)

Name the quadrant in which these points is located.

1. (5, 2)
2. (-3, -1)
3. (-2, 3)

4. (6, 0)
5. (0, -2)
6. (4, -3)

Question No: 25 (Marks: 5)

Let A= {a, b, c} and R is a relation defined on A such that
R = {(a, b), (b, a), (a, a)} http://vustudents.ning.com
Is R reflexive and symmetric? Justify your answer.

Question No: 26 (Marks: 5)

Find the sum of first five terms of following geometric series:
1 + 4 + 16 + ……