

## Practice Questions

### Lecture No. 1

Q1: Separate the statements ( Propositions ) and sentences from the following:

- a)  $7 + 5 = 15$
- b)  $7 + 5 = 12$
- c) The sky is blue.
- d) He is a poor man.
- e) Zaid is a poor man.
- f)  $x \geq 5$
- g) Given  $x = 9$ , then  $x$  is greater than 5.
- h) Open the book.
- i) Logic is not difficult.
- j) Is it hot today?

Q2: Let  $p =$  I am healthy,  $q =$  I am ill.

Then translate the following into word statements:

- a)  $\sim p$
- b)  $\sim q$
- c)  $p \vee q$
- d)  $\sim p \wedge q$
- e)  $\sim p \vee q$
- f)  $p \wedge \sim q$

Q3: When is  $p \wedge q$  True?

Q4: When is  $p \wedge q$  False?

Q5: When is  $p \vee q$  True?

Q6: When is  $p \vee q$  False?

Q7: Write the conjunction of  $p$  and  $q$  in symbolic form.

Q8: Write the disjunction of  $p$  and  $q$  in symbolic form.

Q9: Let  $p =$  Saleem is a student,  $q =$  Saleem is hardworking.

Then translate the following into symbolic statements:

- a) Saleem is NOT a student.
- b) Saleem is NOT hardworking.
- c) Saleem is a student AND Saleem is hardworking
- d) Saleem is a student AND Saleem is NOT hardworking
- e) Saleem is NOT a student OR Saleem is hardworking
- f) Saleem is NOT a student AND Saleem is NOT hardworking