

HERAMB COACHING CLASSES

XI/ MATHS

Marks: 30

Duration: 1Hr

Date: 24/05/18

ATTEMPT ANY TEN ONLY

Q.NO. 1 State which of the following sentence is a statement and write their truth value

- (i) Please get me a pen. (ii) Today is Sunday.
(iii) The square of any odd integer is positive. (iv) Two parallel lines intersect each other.

Q.NO. 2 Express the following into symbolic form

- (i) It is raining and cold. (ii) He is tall but handsome.
(iii) Either we play kabaddi or go for cycling. (iv) Shobha speaks Marathi or English.

Q.NO. 3 Write the negation of the following

- (i) 3 is a rational number. (ii) 7 is greater than 5.
(iii) Zero is a complex number. (iv) $2+5=7$.

Q.NO. 4 Write the truth value of the following

- (i) $3+3=7$ if and only if $3+5=1$
(ii) If Taj mahal is in Madhaya Pradesh then Pune is in Punjab.
(iii) Neither 21 is a prime number nor is it divisible by 3.
(iv) Milk is white if and only if sky is blue.

Q.NO. 5 Given p: stock price is high. Q: stock is rising. Write the following in the verbal form

- (i) $p \vee q$ (ii) $p \rightarrow q$ (iii) $p \rightarrow \sim q$ (iv) $p \leftrightarrow q$

Q.NO. 6 Given p: Rahul is rich. Q: He is happy. Write the following in the verbal form

- (i) $\sim p \rightarrow q$ (ii) $\sim p \wedge q$ (iii) $p \rightarrow \sim q$ (iv) $\sim p \leftrightarrow \sim q$

Q.NO.7 Represents the following by venn diagram

- (i) Equilateral triangles are isosceles.
(ii) Some rational numbers are not integers.
(iii) No circles are polygons.

Q.NO.8 Using the truth table, determine the given statement pattern is tautology, contradiction or contingency $(\sim p \vee q) \rightarrow [p \wedge (q \vee \sim q)]$.

Q.NO.9 Write the negation of the following

- (i) All students have completed their homework and the teacher is present.
(ii) $\exists n \in \mathbb{N}$, such that $n^2 = n$.

Q.NO.10 Write the negation of the following

- i. Economic growth and per capita income is more in America.
ii. Rajani is rich if and only if she is a doctor.

Q.NO.11 Write the converse, inverse and contrapositive of the given statement "The crop will be destroyed if there is a flood.