Name: _____	**Subject:** Mathematics	**Class:** 11th	**Time:** 80 minutes	Total Marks:	**40**
Chapter No.01	**MJDexpert.com**			Obtained marks	

Note: Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

Question.No.01:- Choose the correct answer.

(10x01=10)

		A.	B.	C.	D.
i.	The function of the form $f(x) = \frac{p(x)}{q(x)}$, $q(x) \neq 0$ where $p(x)$ and $q(x)$ are polynomial in x is called	Identity	equation	fraction	Algebraic fraction
ii.	Additive identity in the set of complex number is:	(0 , 0)	(0 , 1)	(o , -1)	(1 , 0)
iii.	Every rational number is:	natural	rational	irrational	prime
iv.	Factor of $9a^2+16b^2$ are:	3a+4b) (3a-4b)	(3a+4*ib)* (3a-4*i*b)	(3a*i*+4b) (3a*i*-4b)	none of these
v.	$(i)^{101}$ equal to:	1	-1	i	-i
vi.	The property $\forall a \in R, a = a$ is called:	Reflexive	Symmetric	Transitive	None of these
vii.	Which of the following is not a binary operation.	Division	Sum	Addition	Square Root
viii.	$(-i)^{19}$ is equal to:	$-i$	i	1	-1
ix.	The set $\{0,1\}$ closed w.r.t	Addition	Subtraction	Multiplication	Subtraction
x.	The number $\sqrt{-1}$ is called:	Real number	Complex number	Natural number	None of these

Question.No.02:-Solve all parts. **(02x10=20)**

i) Simplify(5,4)÷(−3,−8).
ii) Define recurring and terminating decimal.
iii) Prove that $\bar{z} = z$ iff z is real.
iv) Show that s= {1, −1, i, −i} is closed with respect to multiplication. Where$i$2=−1.
v) Simplify the following (-1)$^{\frac{-21}{2}}$.
vi) Define rational and irrational number.
vii) Show that $Z^2+\bar{Z}^2$ is a real number.
viii) Find multiplicative inverse of the -3*i*.
ix) Factorize $a^2 + 4b^2$.
x) Find the modulus of $(2, -3)$.

Question.No.03: -Solve all parts. **(02x05=10)**

a) Express the complex number in polar form $1 + i\sqrt{3}$.
b) Simplify the following: $\left(-\frac{1}{2} - \frac{\sqrt{3}}{2}i\right)^3$