**MCQ Multiple AnswerNumerical QuestionNumerical Question**

**1)** Let denote the complex conjugate of a complex number . If is a non-zero complex number for which both real and imaginary parts of  
  
 ?

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**A)**

**B)**

**C)**

**D)**

**2)** Let denote the complex conjugate of a complex number and let . In the set of complex numbers, the number of distinct roots of the equation

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**3)** Let be a complex number with a non-zero imaginary part. If  
  
  
  
 is \_\_\_\_\_\_\_\_\_.

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**MCQ Multiple Answer**

**4)** For any complex number w = c + id, let , where . Let and be real numbers such that for all complex numbers z = x + iy satisfying , the ordered pair (x, y) lies on the circle , Then which of the following statements is (are) TRUE?

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**A)**  = 1

**B)**  = 4

**C)**  = 4

**D)**  = 4

**MCQ Single Answer**

**5)** Let <sub>1</sub>, <sub>2</sub>, ........, <sub>10</sub> = 2. Define the complex numbers z<sub>1</sub> = e<sup>i<sub>1</sub></sup>, z<sub>k</sub> = z<sub>k 1</sub>e<sup>i<sub>k </sub></sup> for k = 2, 3, ......., 10, where i = . Consider the statements P and Q given below :

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**A)** P is TRUE and Q is FALSE

**B)** Q is TRUE and P is FALSE

**C)** both P and Q are TRUE

**D)** both P and Q are FALSE

Q1) D  
0  
Correct answer

Q2) Correct answer is 25

Q3) B  
1  
Correct answer

Q4) B  
18  
Correct answer

Q5) D  
2  
α  
Correct answer

Q6) Correct answer is 4

Q7) D  
continuous everywhere but not differentiable exactly at one point  
Correct answer

Q8) D  
continuous everywhere but not differentiable exactly at one point  
Correct answer

Q1) D  
0  
Correct answer

Q2) Correct answer is 25

Q3) B  
1  
Correct answer

Q4) B  
18  
Correct answer

Q5) D  
2  
α  
Correct answer

Q1) D  
0  
Correct answer

Q2) D  
0  
Correct answer

Q3) D  
0  
Correct answer

Q4) D  
0  
Correct answer

Q5) D  
0  
Correct answer

Q6) D  
0  
Correct answer

Q7) D  
0  
Correct answer

Q8) D  
0  
Correct answer

Q9) D  
0  
Correct answer

Q10) D  
0  
Correct answer

Q11) D  
0  
Correct answer

Q12) D  
0  
Correct answer

Q13) D  
0  
Correct answer

Q14) D  
0  
Correct answer

Q15) D  
0  
Correct answer

Q16) D  
0  
Correct answer

Q17) D  
0  
Correct answer

Q18) D  
0  
Correct answer

Q19) D  
0  
Correct answer

Q20) D  
0  
Correct answer

Q1) D  
0  
Correct answer

Q2) Correct answer is 25

Q3) B  
1  
Correct answer

Q4) B  
18  
Correct answer

Q5) D  
2  
α  
Correct answer

Q6) Correct answer is 4

Q7) C  
continuous at  
x  
=  
1  
, but not continuous at  
x  
=  
0  
Correct answer

Q8) D  
continuous everywhere but not differentiable exactly at one point  
Correct answer

Q9) Correct answer is 2

Q10) B  
68  
Correct answer

Q11) A  
3  
Correct answer

Q12) A  
f  
is continuous but  
f  
′  
is not continuous  
Correct answer

Q13) B  
n  
Correct answer

Q14) D  
(  
−  
7.5  
,  
−  
6.5  
)  
Correct answer

Q15) B  
3  
2  
(  
2  
+  
1  
)  
Correct answer

Q16) B  
10  
Correct answer

Q17) C  
0  
Correct answer

Q18) A  
1  
Correct answer

Q19) C  
19  
Correct answer

Q20) D  
is equal to 27  
Correct answer