**SRM University**

**Department of Mathematics**

**Complex Integration- Multiple Choice questions**

**UNIT V**

1. A curve which does not cross itself is called a
2. Curve
3. Closed curve
4. Simple closed curve
5. Multiple curve
6. The value of  where c is the circle 
7. 0
8. 
9. 
10. 2
11. The value of  where c is the circle 
12. 
13. 2
14. 
15. 0
16. The value of  (n) where c is the circle 
17. 
18. 
19. 
20. n
21. The value of  where c is the circle 
22. 0
23. 
24. 
25. 2
26. The value of  where c is the circle 
27. 0
28. 
29. 
30. 2
31. If f(z) is analytic inside and on c , the value of  ,where c is the simple closed curve
32. f(a)
33. 2f(a)
34. f(a)
35. 0
36. If f(z) is analytic inside and on c , the value of  ,where c is the simple closed curve
37. f(a)
38. 2f(a)
39. f(a)
40. 0
41. If f(z) is analytic inside and on c , the value of  ,where c is the simple closed curve
42. f’(a)
43. 2f’(a)
44. f’(a)
45. 0
46. If f(z) is analytic inside and on c , the value of  ,where c is the simple closed curve
47. f’’(a)
48. 2f’’(a)
49. f’’(a)
50. 0
51. Let  be a circle, the f(z) can be expanded as a Taylor’s series if
52. f(z) is a defined function within c
53. f(z) is a analytic function within c
54. f(z) is not a analytic function within c
55. f(z) is a analytic function outside c
56. Let  and be two concentric circles (), the f(z) can be expanded as a Laurent’s series if
57. f(z) is analytic within 
58. f(z) is not analytic within 
59. f(z) is analytic in the annular region
60. f(z) is not analytic in the annular region
61. Let  and be two concentric circles(), the annular region is defined as
62. Within 
63. Within 
64. Within  and outside 
65. Within  and outside 
66.  consisting of positive integral powers of (z - a) is called as
67. The analytic part of the Laurent’s series
68. The principal part of the Laurent’s series
69. The real part of the Laurent’s series
70. The imaginary part of the Laurent’s series
71.  consisting of negative integral powers of (z - a) is called as
72. The analytic part of the Laurent’s series
73. The principal part of the Laurent’s series
74. The real part of the Laurent’s series
75. The imaginary part of the Laurent’s series
76. The annular region for the function f(z) =  is
77. 0 <  < 1
78. 1 <  < 2
79. 1 <  < 0
80.  < 1
81. The annular region for the function f(z) =  is
82. 0 <  < 1
83. 1 <  < 2
84. 1 <  < 0
85.  < 1
86. The annular region for the function f(z) =  is
87. 0 <  < 1
88. 1 <  < 2
89. 2 <  < 3
90.  < 3
91. If f(z) is not analytic at z = zo and there exists a neighborhood of z = zo containing no other singularity, then
92. The point z = zo  is isolated singularity of f(z)
93. The point z = zo  is a zero point of f(z)
94. The point z = zo  is nonzero of f(z)
95. The point z = zo  is non isolated singularity of f(z)
96. If f(z) =  , then
97. Z= 0 is a simple pole
98. Z= 0 is a pole of order 2
99. Z= 0 is a removable singularity
100. Z= 0 is a zero of f(z)
101. If f(z) =  , then
102. Z= 0 is a simple pole
103. Z= 0 is a pole of order 2
104. Z= 0 is a removable singularity
105. Z= 0 is a zero of f(z)
106. If   then
107. Z= a is a simple pole
108. Z= a is a pole of order n
109. Z= a is a removable singularity
110. Z= a is a zero of f(z)
111. If f(z) = , then
112. 4 is a simple pole, 3 is a pole of order 3 and 1 is a pole of order 2
113. 3 is a simple pole, 1 is a pole of order 3 and 4 is a pole of order 2
114. 1 is a simple pole, 3 is a pole of order 3 and 4 is a pole of order 2
115. 3 is a simple pole, 4 is a pole of order 1 and 4 is a pole of order 2
116. If f(z) =  then
117. Z = 4 is removable singularity
118. Z = 4 is pole of order 2
119. Z = 4 is an essential singularity
120. Z = 4 is zero of f(z)
121. If f(z) = cot then
122. Z =  is a removable singularity
123. Z =  is a simple pole
124. Z =  is an isolated singularity
125. Z =  is a non - isolated singularity
126. Let z = ais a simple pole for f(z) and b = (z - a)f(z), then
127. b is a simple pole
128. b is a residue at a
129. b is removable singularity
130. b is a residue at a of order n
131. The residue of f(z) =  is
132. 0
133. 2
134. -2
135. 1
136. The residue of f(z) =  is
137. 
138. 
139. -1
140. 
141. The residue of f(z) = cot is
142. 
143. 1
144. -1
145. 0
146. The value of  where c is any circle with center at origin, 
147. 0
148. 
149. 
150. 

**Answers:**

1. c
2. a
3. d
4. c
5. b
6. c
7. b
8. d
9. b
10. c
11. b
12. c
13. d
14. a
15. b
16. a
17. b
18. c
19. a
20. c
21. c
22. b
23. c
24. c
25. d
26. b
27. c
28. d
29. b
30. b