G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY SET-1
B. Tech II Year-II Semester (R13) Regular II MID EXAMINATIONS.MAY-2017
MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min Roll No:______________________________ Date: 08-05-17
Marks:10

1) A mapping that preserves angle and sense is ----------------- [ ]
a) Isogonal b)conformal c)Bilinear d)None

2) The other name of the bilinear transformation is-------------[]

a) Conformal b)Mobius c) Invariant d)None

3)Cauchy- Riemann equations are[]

a) $\frac{\partial u}{\partial x}=\frac{\partial v}{\partial y}\ and\ \frac{\partial v}{\partial x}=\frac{\partial u}{\partial y}$ b) $\frac{\partial u}{\partial x}=\frac{\partial v}{\partial y}\ and\ \frac{\partial v}{\partial x}=-\frac{\partial u}{\partial y}$

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4)If u=cosxcoshy ,then the corresponding analytic function is[ ]

a)f(z)=sinz+c b)f(z)=sinhz+cc) f(z)=coshz +c d) f(z)=cosz +c

5) If $\underset{z\to z_0}{lt}$ f(z) exists then the limit is [ ]

a)Unique b) Not Unique c)Twice d)None

6)A point at which f(z)fails to be analytic is called ------------off(z)[ ]

a) Singular points b) Zero pointsc) Null points d) None

7) $f(z)=\frac{2z+1}{z^2-2z}$ the polesof f(z) are---------------[ ]

a) 0,1 b) 0,2 c) 0,-2 d) None

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9)The residue of f(z)=$\frac{z}{z^2+1}$ at z= i --------------[ ]

a) $\frac{i}{2}$ b) $\frac{1}{4}$ c) $\frac{-1}{4i}$ d)None

10)The zeros of z^2+9 are [ ]

a)$\pm 3i$ b)3i c) ± 3 d)None

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MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No:__________________________________** **Date: 08-05-17**

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G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY SET-4

B. Tech II Year-II Semester (R13) Regular II MID EXAMINATIONS.MAY-2017

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min Roll No:__________________________________ Date: 08-05-17

Marks:10

1) If $\underset{z \to z_0}{lt}$ f(z) exists then the limit is [ ]

a)Unique b) Not Unique c)Twice d)None

2) Determine the pole of f(z)= $\dfrac{z^2}{(z-1)^2(z+2)}$ [ ]

a) z=1 is a pole of order 2 b) z = -2 is a pole of order 1 c) Both (a&b)d) None

3)A point at which f(z)fails to be analytic is called ------------off(z) [ ]

a) Singular points b) Zero pointsc) Null points d) None

4) $f(z)=\dfrac{2z+1}{z^2-2z}$ the polesof f(z) are--------------- [ ]

a) 0,1 b) 0,2 c) 0,-2 d) None

5)If f(z) has a simple pole at z=a,then Res f(z)=------------- [ ]

a) $\underset{z \to a}{lt}$ (z-a)f(z) b) $\underset{z \to a}{lt} \dfrac{1}{(n-1)!}\{\dfrac{d^{n-1}}{dx^{n-1}}(z-a)^n f(z)\}$ c) $\underset{z \to a}{lt}$ f(z) d)None

6)The zeros of z^2+9 are [ ]

a)$\pm 3i$ b)3i c) ± 3 d)None

7)If $\int_{-\infty}^{\infty}\dfrac{dx}{x^4+1}=\dfrac{\pi}{\sqrt{2}}$ then $\int_{0}^{\infty}\dfrac{dx}{x^4+1}$ is ---------- [ ]

a) $\dfrac{\pi}{2\sqrt{2}}$ b) $\sqrt{2}\,\pi$ c) π d) None

8) If f(z) is analytic within and on a closed curve c , and if `a'is any point within c, then $\int_c \dfrac{f(z)}{z-a}dz =$ [ ]

a) f(a) b) $2\pi i f(a)$ c) $\dfrac{f(a)}{2\pi i}$ d) 2π f(a)

9) $f(z)=z^3$ is [ ]

a) Analytic everywhere b) Not analytic anywhere

c) Analytic for all finite values of z except at z=0 d)None of these

10)If f(z)=e^x(cosy+isiny) is an analytic function,then f $f^1(z)=$ [ ]

a)e^x b)$e^{\frac{1}{z}}$ c) e^{xy} d)e^z

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11)The residue of f(z)= $\frac{z}{z^2+1}$ at z= i -------------- [ ]

a) $\frac{i}{2}$ b) $\frac{1}{4}$ c) $\frac{-1}{4i}$ d)None

12) Laurent series expansion contains ----------------power [ ]

a)Positiveb)Negative c) Both (a)&(b) d) None

13) Evaluate $\int_c \frac{1}{z^2+4}dz$,c: $|z|=1$ [ ]

a) 0 b) ± 1 c) ± 2 d)None

14)The value of $\int_c \frac{\cos \pi z}{z-1}dz$ where c is $|z| = 3$ *is* [ ]

a)2πi b)- 2πi c) 0 d) -4πi

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16)The value of $\int_0^{2\pi} \frac{d\theta}{a+b\cos\theta}$, where a> b > 0 is ----------- [ ]

a) $\frac{1}{\sqrt{a^2-b^2}}$ b) $\frac{2\pi}{\sqrt{a^2-b^2}}$ c) $\frac{2\pi}{\sqrt{(a^2+b^2)}}$ d) None

17)A mapping that preserves angle and sense is ---------------- [ ]

a) Isogonal b)conformal c)Bilinear d)None

18) The other name of the bilinear transformation is------------ [ ]

a) Conformal b)Mobius c) Invariant d)None

19)Cauchy- Riemann equations are [ ]

a) $\frac{\partial u}{\partial x} = \frac{\partial v}{\partial y}$ *and* $\frac{\partial v}{\partial x} = \frac{\partial u}{\partial y}$ b) $\frac{\partial u}{\partial x} = \frac{\partial v}{\partial y}$ *and* $\frac{\partial v}{\partial x} = -\frac{\partial u}{\partial y}$

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