## صeExam Question Bank

## Coursecode:



| $\square$ | Question <br> Type $\sqrt{\text { 吕 }}$ | Question | A |
| :---: | :---: | :---: | :---: |
| $\square$ | FBQ | The real part of an analytic function is | harmonic |
| $\square$ | FBQ | If $f$ is differentiable for all points in an open disk centered at <br> then $f$ is $\square$ | holomorphic |
| $\square$ | FBQ | If an analytic function is smooth, then it is | infinitely differentiable |
| $\square$ | FBQ | If $f(z)$ is continuous in a closed and bounded region $R$, then $\|f(z)\|$ is $\square$, in the region. | bounded |
| $\square$ | FBQ | If we have a function <br> $\omega=f(z)$ such that $\omega=f\left(z_{0}+r e^{i \theta}\right)$ takes on different values as $\theta$ increases by $2 \pi$, then the point $z_{0}$ is called a $\square$ __of the function. | branch point |
| $\square$ | FBQ | A function $f(z)$ is complex $\square$ at $c$ if $\lim z \rightarrow c \frac{f(z)-f(c)}{z-c}$ | differentiable |
| $\square$ | FBQ | A function $f(z)$ is $\square$ at c if $\lim _{z \rightarrow c} f(z)=f(c)$ | continuous |
| $\square$ | FBQ | A branch point is said to be of order $\square$ whenever a function $w=f(z)$ is an $n$-valued function in the neighbourhood $\left\|z-z_{0}\right\|<\epsilon$ | $\mathrm{n}-1$ |
| $\square$ | FBQ | A line which connects two and only two branch points is called a | branch cut |
| $\square$ | FBQ | The difference between (-4-3i) and (-2-7i) is $\square$ | $(-2+4 i)$ |
| $\square$ | FBQ | The conjugate of the conjugate of $z=2-3 i$ is $\square$ | $z=2-3 i$ |
| $\square$ | FBQ | If $\backslash\left[z \_1=3(\cos 60+i \sin 60) \backslash ; a n d \backslash ; z \_2=2(\cos 30+i \sin 30) ; ; ;\right.$ arel; complex\; numbers, $\backslash ;$ then $\left.\backslash ; z \_1 z \_2 \backslash\right]=$ $\square$ | 6 |
| $\square$ | FBQ | The sum of (4-3i) and (-2-7i) is $\square$ | (2-10i) |
| $\square$ | FBQ | In an Argand diagram, the purely imaginary numbers lie along the | $y$-axis |
| $\square$ | FBQ | The equation $\backslash\left((\cos \backslash \text { theta }+i \sin \backslash t h e t a)^{\wedge} n=\cos n \backslash\right.$ theta $+i \sin n \backslash$ theta, $\backslash ; \backslash ;$ forl;any $\backslash ; n l i n$ Z $\$;and $\$;any $\$;angle $\$; theta $\ ; ;$;bestl $\mid$;describes $\]$ $\square$ | De Moivres Theorem |


| $\square$ | MCQ | If $f$ is an infinitely differentiable function defined on an open set $\backslash[D / s u b s e t ~ R ~ \] ~ t h e n ~ t h e ~ f o l l o w i n g ~ c o n d i t i o n s ~ e x c e p t ~ o n e ~ a r e ~$ equivalent | f is real analyti |
| :---: | :---: | :---: | :---: |
| $\square$ | MCQ | The following are analytic functions except | Any real or complex polynomial |
| $\square$ | MCQ | The branch cut of inverse cosecant is | $(-1,0)$ |
| $\square$ | MCQ | An example of Branch points is | 0 is a branch point of the square root function. |
| $\square$ | MCQ | If $f$ is differentiable for all points in an open disk centered at $\backslash\left[z \_00 ;\right.$ then $\backslash ; f ;$ is $\left.\backslash ; \ldots . . . . . \mid\right]$ | holomorphic |
| $\square$ | MCQ | All but one of the following are true | If $f(z)$ is complf differentiable, then so is $\operatorname{cf}(z)$ where c is a constant |
| $\square$ | MCQ | A function $f(z)$ is complex differentiable at c if | $lim_\{zlto c\}\|frac\{f(z)\}\{c-z exists$ |
| $\square$ | MCQ | One of the following is true about a continuous function | A function $f(z)$ continuous if it continuous at : points where it defined. |
| $\square$ | MCQ | A function $f(z)$ is continuous at $c$ if | \ $\left[\lim \_\{x \text { lto } c\} f(:\right.$ f(c)!] |
| $\square$ | MCQ |  | $\begin{aligned} & \backslash[2 \mid f r a c\{1\}\{2\}(c \\ & 15+i \sin 15)(c \\ & 30+i \sin 30) \backslash] \end{aligned}$ |
| $\square$ | MCQ | Let $f(z)=u+v$ be an analytic function, one of the following statements in not correct | If $f^{\prime}(z)$ is identically zerc then $f(z)$ is a constant |
| $\square$ | MCQ | In a complex function $\backslash[f(z)=u(x, y)+i v(x, y), \backslash ; z+i y \backslash]$ is analytic in a domain $D$ iff | there exist no relationship between $u$ and |
| $\square$ | MCQ | All the following are true except | The sums of analytic functic are analytic |
| $\square$ | MCQ | ......... obeys the associativity of multiplication property for complex numbers $\backslash[$ z_\{1\},z_\{2\},z_\{3\},\] | $\begin{aligned} & \backslash\left[z \_\{1\}\right. \\ & \left(z_{-}\{2\} z \_\{3\}\right)= \\ & \left(z_{-}\{1\} z \_\{2\}\right) z \text { _ } \end{aligned}$ |
| $\square$ | MCQ |  | $\mathrm{a}=\mathrm{b}$ |
| $\square$ | MCQ | Let $\mathrm{z}=\mathrm{x}+\mathrm{iy}$ be a complex number, then the argument of z is | $\\left[\tan ^{\wedge}\{-1\} \mid\right.$ frac \{y\}] |
| $\square$ | MCQ | In an Argand diagram ,the purely real numbers lie along the ............. | $x$-axis |
| $\square$ | MCQ | $\backslash\left[\right.$ etl;z_\{1\} = x_\{1\} + iy_\{1\}\|;andl; z_\{2\} = x_\{2\} + iy_\{2\},\;thenl;z_\{1\} + z_\{2\} = ........... ${ }^{\text {l }}$ ] | $\begin{aligned} & \backslash\left[x \_\{1\}+x_{-}\{2\}\right. \\ & \left.\mathrm{y} \_\{1\}+\mathrm{y} \_\{2\} \backslash\right] \end{aligned}$ |
| $\square$ | MCQ | The polar form of the complex number $\mathrm{z}=\mathrm{x}+\mathrm{iy}$ is given by ............. | $\backslash r[\cos \mid t h e t a+$ sinltheta]!] |


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| $\square$ | MCQ | If $z=x+i y$ is a complex number, then $z$ is said to be .......... if $\mathrm{y}=0$ |  |  |  |
| Showing 1 to 35 of 35 entries |  |  |  |  |  |
|  |  |  | Previous | 1 | Next |

