

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

We also provide Past papers for Mids. and Finals

Cross Check your answers befo re submitting directly from the file. We are not responsible for 100% correction as human error exists

Question #1:

The second-order linear differential equation is a Bessel equation of degree:

Options:

1. 0
2. 1
3. 2
4. 3

Correct Option: 2

Question #2:

The equation $((1 - x^2)\frac{d^2y}{dx^2} - 2x\frac{dy}{dx} + 30y = 0)$ has the singular point(s) at:

Options:

1. -1
2. 0
3. 1
4. None of these

Correct Option: -1 and 1

Question #3:

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

The equation $((x^2 + 1)\frac{d^2y}{dx^2} + 2x\frac{dy}{dx} + 6y = 0)$ has the singular point(s) at:

Options:

1. -1
2. 0
3. 1
4. Both -1 and 1

Correct Option: Both -1 and 1

Question #4:

To solve a differential equation about a regular singular point, we employ the _____ theorem.

Options:

1. None of them
2. Frobenius
3. Legendre
4. Bessel

Correct Option: Frobenius

Question #5:

A power series in $(x-2)$ is an infinite series of the form. The number 2 is called _____.

Options:

1. Center of power series
2. Radius of power series
3. None of these

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

Correct Option: Center of power series

Question #6:

Bessel functions of index half an _____ integer are called Spherical Bessel functions.

Options:

1. odd
2. even

Correct Option: odd

Question #7:

A singular point of the differential equation is said to be a _____ point if both $P(x)$ and $Q(x)$ are analytical at x .

Options:

1. None of them
2. regular singular
3. irregular singular
4. ordinary

Correct Option: regular singular

Question #8:

A point that is not an ordinary point is said to be a singular point of the equation.

Options:

1. True
2. False

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

File by MAM MEHWISH 03184148783
Paid LMS Handling Available

Correct Option: True

Question #9:

The conversion of Cauchy Euler equation $\left(x^2 \frac{d^2 y}{dx^2} - x \frac{dy}{dx} + y = \ln x\right)$ after putting $(x = \{e^t\})$ becomes:

Options:

1. $\left(t^2 \frac{d^2 y}{dt^2} + (t-1) \frac{dy}{dt} + y = t\right)$
2. $\left(e^{2t} \frac{d^2 y}{dt^2} - e^t \frac{dy}{dt} + y = \ln(e^t)\right)$

Correct Option: $\left(t^2 \frac{d^2 y}{dt^2} + (t-1) \frac{dy}{dt} + y = t\right)$

Question #10:

The differential equation has singular points at:

Options:

1. $(x = 2)$ and $(x = -2)$
2. $(x = 1)$ and $(x = 2)$
3. $(x = 0)$

Correct Option: $(x = 2)$ and $(x = -2)$

File by MAM MEHWISH 03184148783
Paid LMS Handling Available