

**INTERNAL ASSESMENT
KANDI RAJ COLLEGE
DEPARTMENT OF PHYSICS
STREAM: GENERAL (Core)**

SEMESTER: 5th

Date of Exam: 21.03.2021

PAPER CODE: PHY-GCC-SEC-T-03

Paper: Physics Workshop Skill

Full marks: 5

Answer any five questions:

5x1=5

1. What is resistivity of a wire?
2. Define Vernier constant of a Slide Calipers.
3. What do you understand by Laser welding?
4. Define Mechanical advantage of a Lever.
5. What do you understand by a PCB board?
6. What is avalanche breakdown of a Zener diode?
7. What do you understand by metal casting?

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PAPER CODE: PHY-GCC-DSE-T-01

Paper: Mechanics

Full marks: 10

Answer any five questions:

5x2=10

1. Let \vec{A} be an arbitrary vector and let \hat{n} be a unit vector in some fixed directions. Show that
$$\vec{A} = (\vec{A} \cdot \hat{n}) \hat{n} + (\hat{n} \times \vec{A}) \times \hat{n}$$
 2. Solve : $\frac{dy}{dx} = (4x + y + 1)^2$, if $y(0) = 1$.
 3. In a tug of war, the team that pushes harder against the ground wins. Why?
 4. Can a body have momentum without energy? How does the kinetic energy of a body changes if its momentum is doubled?
 5. What is gravitational force? What is the SI unit of G?
 6. Can we determine the gravitational mass of a body inside an artificial satellite? Why are space rockets usually launched from west to east in equatorial plane?
 7. What is damping in oscillation? What do you mean by resonant oscillation?
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