Pimpri Chinchwad Education Trust's

Pimpri Chinchwad College of Engineering

Internal Examination Assignment-1

Department: Mechanical Engineering Academic Year: 2021-2022 **Semester:** I

IEA – 1

Div.: SE (A, B, C) **Maximum Marks:20**

Subject: Materials Engineering

Note:

1. Write answers of each question in detail.
2. Draw neat sketches wherever applicable.
3. Write the assignment on A4 paper.
4. Write your Name, Division, and Roll No. at top right side of first page.
5. Sign on last page of the assignment.
6. Don't copy the write-up.
7. Scan the assignment and upload it on Google Classroom.

CO1: Correlate crystal structures and imperfections in crystals with mechanical behavior of materials.

Q.1.	Calculate the Atomic packing fraction for FCC and BCC unit cell	CO1	5
Q.2.	Find the density of unknown FCC material of (a) Lattice parameter/constant = 3.61 Å, MA = 63.54 gm/mole (b) Atomic radius = 1.44 Å, MA = 196.97 gm/mole	CO1	5
Q.3.	Define imperfections in the crystals, list out the types of imperfections with examples.	CO1	5
Q.4.	Differentiate between Edge dislocation and Screw dislocations	CO1	5