Tatyasaheb Kore Institute of Engineering & Technology, Warananagar
(An Autonomous Institute)
F.Y. B. Tech (Sem-I), In Semester Examination –II, Oct. 2023

ENGINEERING PHYSICS

Day and Date: Thursday, 26/10/2023   **Marks: 30**

Time : 9:15 am to 10:15 am

Instructions: i) Use of a non-programmable calculator is allowed.

ii) Figures to the right indicate full marks.

Q.1	Attempt any 3 of the following questions.	Unit No	CO	marks
a)	Explain the construction and working of AFM with a neat diagram.	3	3	**5**
b)	Discuss briefly the top-down and bottom-up approaches used in synthesizing nanomaterials.	3	3	**5**
c)	Explain the Electrical, Magnetic and Mechanical properties of nanomaterials.	3	3	**5**
d)	Write a note on applications of nanomaterials.	3	3	**5**

Q.2	Attempt any 3 of the following questions.			
a)	Define the Reverberation and Absorption Coefficient. State and explain Sabine's formula for Reverberation Time.	4	4	**5**
b)	What is architectural acoustics? Explain any four factors affecting architectural acoustics.	4	4	**5**
c)	A hall has a volume of 1,20,000 m^3. It has a reverberation time of 1.55 sec. What is the average absorbing power of the surface and total sound absorption in the hall, if the total sound-absorbing surface is 26,500 m^2.	4	4	**5**
d)	The volume of the room is 1200 m^3. The wall area is 220 m^2, the floor area is 120 m^2, ceiling area is 120 m^2. The average sound absorption coefficient – (i) for the wall is 0.03 OWU, (ii) for the ceiling 0.8 OWU, and (iii) for the floor is 0.06 OWU. Calculate the average sound absorption coefficient and Reverberation Time.	4	4	**5**

BEST LUCK