



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

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| | InSem Examination-IWinter 2023 | | |
| | Exam Seat No.: | | |
| | Academic Year:2023-2024 | Semester: III | |
| | Name of Programme: B. Tech | Pattern:2022 | |
| | Name of Course: Engineering Materials | Course Code:CHE222004 | |
| | Max. Marks:30 | Duration:1 hrs | |

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| <p>Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.</p> <ol style="list-style-type: none">1. This question paper contains _____page(s).2. Answer to each new question is to be started on a new page.3. Assume suitable data wherever required, but justify it.4. Draw the neat labelled diagrams, wherever necessary.5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question | |
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Question No. 1 Attempt following Question

- a) Write in detail the classification of Engineering Materials. (5) CO1

OR

- b) Explain method for welding with suitable diagram. (5) CO1

- c) Define :

1. Hardness (5) CO1
2. Toughness

OR

- d) A hollow cylinder 2m long has an outside diameter of 50 mm and inside diameter of 30 mm. If cylinder is carrying a load of 25 KN. Find the stress in cylinder. Also find the deformation of the cylinder, if the values of modulus of elasticity of cylinder is $E=100 \times 10^3 \text{ N/mm}^2$. (5) CO1

- e) Explain in detail stress-strain curve showing elastic and plastic limit of ductile metal. (5) CO1

OR

- f) Write a note on ultimate tensile stress, Design stress, and factor of safety. (5) CO1

Question No. 2 Attempt following Question

- a) What is destructive testing and give its application? (5) CO2

OR

- b) Write about the hardness of materials and different types of hardness. (5) CO2

- c) Write in details about Brinells Hardness Test. (5) CO2

OR

- d) Write in details about Dye Penetrant Test. (5) CO2

- e) Write in details about Ultra sonic Testing. (5) CO2

OR

- f) Write in details about Vickers Hardness Test. (5) CO2