

23. Which one of the following elements/alloys exhibits season cracking?  
 (a) Iron (b) Brass  
 (c) Aluminium (d) Steel
24. Vibration damping in machinery is best achieved by means of base structures made of which one of the following material?  
 (a) Low carbon steel (b) Nodular iron  
 (c) Grey cast iron (d) White cast iron
25. Which of the following elements given below determine(s) the maximum attainable, hardness in steel?  
 1. Chromium 2. Manganese  
 3. Carbon 4. Molybdenum  
 Select the correct answer using the code given below:  
 (a) 1 only (b) 1 and 2  
 (c) 3 only (d) 2 and 4
26. Coefficient of Expansion is practically nil in a particular alloy. What is this alloy?  
 (a) Had field Manganese Steel  
 (b) Invar  
 (c) Vitallium  
 (d) Stellite
27. Which one of the following is correct?  
 Babbitts are used for  
 (a) Gears (b) Bearings  
 (c) Bolts (d) Clutch liners
28. Which material is used for bushes in the bushed-pin type of flexible coupling?  
 (a) Gun metal (b) Plastic  
 (c) Rubber (d) Aluminium
29. The elements which, added to steel, help in chip formation during machining are  
 (a) Sulphur, lead and phosphorous  
 (b) Sulphur, lead and cobalt  
 (c) Aluminium, lead and copper  
 (d) Aluminium, titanium and copper
30. Why are Babbitt alloys used for bearing material?  
 (a) They have excellent embeddability  
 (b) They are relatively stronger than other bearing materials  
 (c) They do not lose strength with increase in temperature  
 (d) They have high fatigue strength
31. Consider the following statements:  
 Alloying elements are added to  
 1. Improve hardness and toughness.  
 2. Corrosion and oxidation resistance improvement.  
 3. Improve machinability and hardenability.  
 4. Increase weight and volume.  
 Which of these statements are correct?  
 (a) 1, 2 and 3 only (b) 2, 3 and 4 only  
 (c) 1, 2 and 4 only (d) 1, 2, 3 and 4
32. Match **List-I** (Component) with **List-II** (Required Property) and select the correct answer using the code given below the lists:  
**List-I**  
 A. Blades of bulldozer  
 B. Gas turbine blades  
 C. Drill bit  
 D. Spring of automobiles  
**List-II**  
 1. High wear resistance and high toughness  
 2. Low Young's modulus and high fatigue strength  
 3. High wear and abrasion resistance  
 4. High creep strength and good corrosion resistance  
**Codes:**
- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 3 | 2 | 1 | 4 |
| (b) | 1 | 4 | 3 | 2 |
| (c) | 3 | 4 | 1 | 2 |
| (d) | 1 | 2 | 3 | 4 |