

Total No. of Questions : 10]

SEAT No. :

**P4004**

[Total No. of Pages : 2

**[4860] - 99**

**M.E. (Mechanical) (Design Engineering)**  
**MATERIAL HANDLING EQUIPMENT DESIGN**  
**(2008 Pattern) (Elective - II)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates :*

- 1) Answer any three questions from each section.*
- 2) Answers to the two sections should be written in separate books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to the right indicate full marks.*
- 5) Use of electronic pocket calculator is allowed.*
- 6) Assume suitable data, if necessary.*

**SECTION - I**

- Q1)** a) What is material handling system? Write its objective and benefits.[8]  
b) Write note on classification of material handling equipments? [8]
- Q2)** a) Define various terminologies in material handling system? Write its significance? [8]  
b) Discuss the principle and features of material handling system? [8]
- Q3)** a) Write in detail packing and storage material? [8]  
b) Explain in detail material handling equation. [10]
- Q4)** a) What are factors affecting on selection material handling equipments? [8]  
b) Discuss in detail travelling mechanism for cantilever crane? [8]

**P.T.O.**

- Q5)** a) Write short note on any two : [10]  
i) Drives for hosting  
ii) Hoisting mechanism  
iii) Electrically driven EOT  
b) Write in detail application of material handling equipments. [6]

### **SECTION - II**

- Q6)** a) Distinguish between chain and ropes. [8]  
b) Explain in detail Grab buckets. [8]
- Q7)** a) What is rope? Explain its types in detail. [8]  
b) Explain in detail load chain. [8]
- Q8)** a) What is belt conveyer? Explain it in detail? [8]  
b) Distinguish screw conveyer and cabin conveyer. [8]
- Q9)** a) Explain in detail objective of storage system. [8]  
b) What is concept of bulk material handling? [10]
- Q10)** a) Write short notes on : [8]  
i) Safety and design in material handling.  
ii) Safety regulations.  
b) Explain in role of warehouse automation in industry. [8]

