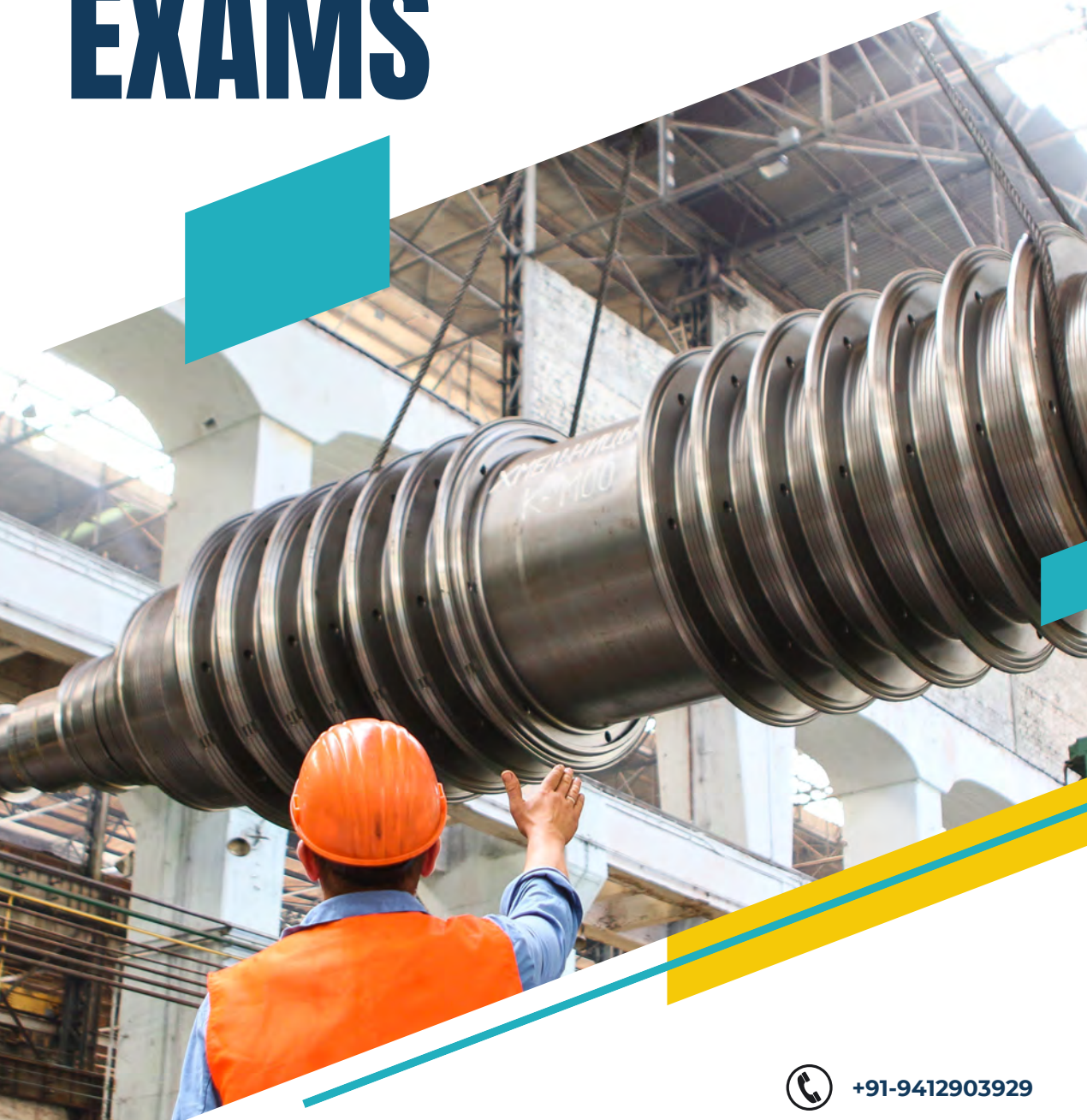


MODEL TEST PAPER FOR AMIE EXAMS



**MANUFACTURING
TECHNOLOGY**

TEST PAPER 1



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MANUFACTURING TECHNOLOGY*Time: Three Hours**Maximum Marks: 100*

Answer five questions, taking ANY TWO from Group A, any two from Group B and all from Group C.

All parts of a question (a, b, etc.) should be answered at one place.

Answer should be brief and to-the-point and be supplemented with neat sketches.

Unnecessary long answer may result in loss of marks.

Any missing or wrong data may be assumed suitably giving proper justification.

Figures on the right-hand side margin indicate full marks.

Group A

1. (a) Distinguish between hardness and hardenability. Explain a method of measuring the hardenability of steel. 6
- (b) Distinguish between a steel and a cast iron. Broadly classify steels and indicate their most common applications. 8
- (c) How is annealing different from normalising ? 6
2. (a) Give the classification of manufacturing processes. Name the commonly used casting processes. With the help of a figure explain investment casting. 8
- (b) Discuss the differences between pressurized and unpressurized gating systems and justify their applications. 6
- (c) Draw a complete process of shell moulding. Write advantages and limitations of this process. 6
3. (a) Why should we do hot working of metals? Enumerate the advantages and disadvantages of hot working. 6
- (b) What are the different methods of extrusion? Describe the hot extrusion process with suitable sketch. 8
- (c) Describe “punching” and “blanking” operations with the help of figures. 6

4. (a) Give the names of different types of plastics normally used commercially. Discuss the various applications of each type. Describe the process of blow molding of plastic. 6
- (b) Describe blow moulding and compression moulding processes and give their applications. 8
- (c) Briefly explain the compaction and sintering processes. Write their advantages and limitations. 6

Group B

5. (a) How are screw threads manufactured by machining processes ? Explain the salient features of those processes. Also mention merits and demerits. 8
- (b) How are the grinding wheels specified ? 6
- (c) Differentiate between honing and buffing. 6
6. (a) What are the main features of NC, CNC and DNC machine tools used for machining? 8
- (b) Define guideway and slideway. Enlist the main requirements to be fulfilled in the design of slideway bearings. 6
- (c) What are open loop and close loop controls in NC machines? 6
7. (a) What are the basic reasons for developing non traditional machining processes? 6
- (b) Name various new machining methods. Explain process capabilities and limitations of AJM, EDM, EBM and LBM. 8
- (c) Draw a schematic set up of ECM unit with label, and explain the material removal process by ECM. 6
8. (a) Differentiate between welding, brazing and soldering. 6
- (b) Explain TIG and MIG system of arc welding. Write their applications and limitations. 8
- (c) Name destructive and non-destructive testing methods of welded joints and explain one destructive and one non-destructive testing method. 6

Group C

9. Answer the following in brief: 20
- (i) What is meant by manufacturing cycle?
 - (ii) Why is tempering heat treatment done after quenching heat treatment?
 - (iii) What are different types of stainless steels?
 - (iv) Differentiate between a mould and a die.
 - (v) What is plastic deformation and its importance?
 - (vi) What is sintering process?
 - (vii) Differentiate between neutral flame and carburising flame.
 - (viii) Name six cutting tool materials.
 - (ix) Name six single and multipoint cutting operations.
 - (x) Explain specification of a grinding wheel.

(Refer our course material for answers)