

# BOARD OF TECHNICAL EDUCATION

PORVORIM-GOIA

November, 2008 Examinations

Programme: MECHANICAL ENGINEERING

Course/Subject: MANUFACTURING PROCESS-I (4034)

Time Duration: 3 Hrs.

Max. Marks: 75

- INSTRUCTIONS:**
1. All Questions are compulsory.
  2. Figures to the right indicate full marks.
  3. Assume suitable additional data if required.

- Q.No. 1 Answer ANY FIVE of the following. (3X5=15)
- a) What are core prints ? State their use.
  - b) Enlist any two defects in castings, giving the remedies.
  - c) Mention any three properties of moulding sand.
  - d) Explain briefly the principle of resistance welding.
  - e) State any three major advantages of Powder Metallurgy.
  - f) Give any three differences between cold working and hot working.
- Q.No. 2 Answer ANY TWO of the following. (6X2=12)
- a) Explain any three types of patterns giving neat sketches.
  - b) What are core boxes ? Describe any two important core boxes giving sketches.
  - c) Giving a suitable sketch explain the forward extrusion.
- Q.No. 3 Answer ANY TWO of the following. (6X2=12)
- a) Describe the construction of cupola furnace giving neat sketch.
  - b) Explain with neat sketch, the hot chamber die casting.
  - c) Discuss the advantages and limitations of powder metallurgy.
- Q.No. 4 Answer ANY TWO of the following. (6X2=12)
- a) Describe in detail any four types of moulding sands.
  - b) Explain in detail the various stages in the ' Sand preparation process '.
  - c) How a green sand mould is prepared ? Explain.
- Q.No. 5 Attempt ANY TWO of the following. (6X2=12)
- a) Giving neat sketch describe the process of oxy-acetylene welding.
  - b) Describe in brief the various tools and equipments used in the arc-welding.
  - c) Compare TIG welding with MIG welding.
- Q.No. 6 Write short note on ANY FOUR of the following. (3X4=12)
- a) Pattern making allowances.
  - b) Properties of moulding sand.
  - c) Defects in castings.
  - d) Submerged Arc welding.
  - e) Hot spinning.
  - f) Self lubricating bearings.
  - g) Piercing operation.
- x —

# BOARD OF TECHNICAL EDUCATION

PORVORIM-GOA

May/June, 2009 Examinations

Programme: MECHANICAL ENGINEERING

Course/Subject: MANUFACTURING PROCESSES-I (4034)

Time Duration: 3 Hrs.

Max. Marks: 75

**INSTRUCTIONS:** 1. All Questions are compulsory.  
2. Figures to the right indicate full marks.  
3. Assume suitable additional data if required.

- Q.No.1. Write short notes on any five:- (5X3=15)
- Core print.
  - Sand additives for moulding.
  - Cold shut.
  - TIG welding.
  - Coining process.
  - Blending of powders for powder metallurgy.
  - Spot welding.
- Q.No.2. Answer any two of the following:- (6X2=12)
- Briefly describe the *AVC* welding process with a neat sketch.
  - When do we carry out gas welding? Explain.
  - Explain the overhead welding procedure with a neat sketch.
- Q.No.3. Answer any two of the following:- (6X2=12)
- Explain briefly what you understand by a hot working process.
  - Explain the process of extrusion with a neat sketch.
  - What is the hot spinning process? Explain briefly.
- Q.No.4. Answer any two of the following:- (6X2=12)
- Explain the sintering process.
  - List the various materials used for pattern making.
  - What allowances are generally made while preparation of patterns? Explain.
- Q.No.5. Answer any two of the following:- (6X2=12)
- What are green sand moulds? Explain.
  - Explain the process of core making.
  - What is the function of carbon dioxide in moulding process? Explain.
- Q.No.6. Answer any two of the following:- (6X2=12)
- List the various defects that take place in casting and sketch any one.
  - Draw a neat sketch of a typical foundry layout.
  - Explain the construction of a cupola with a neat sketch.

\*\*\*\*\*