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RN-6267

B. E. II (Sem. III) (Mech.) Examination

May / June – 2010

Mechanical Technology

Time : **3** Hours] [Total Marks : **100**

Instruction :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 2 (Sem. 3) (Mech.)**

Name of the Subject :

☛ **Mechanical Technology**

☛ Subject Code No. : **6 2 6 7** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Attempt all questions.
(3) Figures to the **right** indicate full marks.
(4) Draw neat sketches wherever required.

SECTION - I

1 (a) Answer the following : **10**
(i) Why the section of sprue reduces downwards?
(ii) Give any two applications of sand casting process.
(iii) Give two limitations of true centrifugal casting process.
(iv) Define casting yield.
(v) Name different types of casting defects.

(b) Draw a neat sketch of a cupola furnace and explain each zone of it. **5**

(c) Calculate the permeability number of sand if it takes 1 min 25 seconds to pass 2000 cm^3 of air at pressure of 5 g/cm^2 through the standard sample. **5**

2 Answer the following :

(a) Sketch the common gating system. Label all its elements. Give their functions. **8**

(b) Explain the method of determining moisture content in the moulding sand. **7**

OR

(b) Describe investment casting process. **7**

3 Answer any **three** from following : **15**

(a) Explain different types of cores.
(b) Write in brief about testing moulding sand properties.
(c) Modulus method of riser design.
(d) Explain different pattern materials.
(e) Explain fluidity and fluidity test.

SECTION - II

4 (a) Answer the following : **10**

(i) Explain the difference between hot working and cold working.
(ii) Differentiate soldering and brazing process.
(iii) Which process is used for production of gas cylinders and washers?
(iv) What is 'angle of bite' in rolling process.
(v) Explain 'Trimming' process in sheet metal working.

(b) Explain forging defects. **7**

(c) Draw the figure of rolling process. 3

5 (a) State merits and demerits of hot working process. **7**

(b) Explain the parameters which control the quality of joint in welding process. **8**

OR

(b) Explain 3-High and 4-High rolling mill with neat sketch. **8**

6 Answer any **three** : **3×5=15**

(i) Brazing process
(ii) Resistance welding
(iii) Welding defects
(iv) Indirect extrusion
(v) Plasma arc welding.
