

Question Paper

Exam Date & Time: 08-May-2019 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES III SEMESTER B.Sc. (APPLIED SCIENCES) IN ENGINEERING END SEMESTER THEORY EXAMINATION APRIL / MAY 2019 MANUFACTURING PROCESS ENGG. [IME 232]

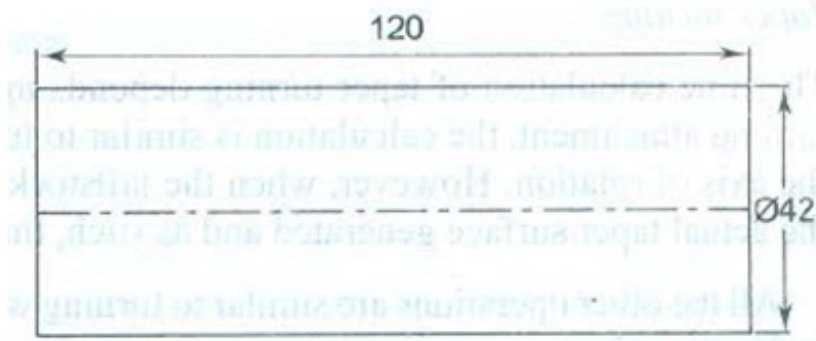
Marks: 100

Duration: 180 mins.

Answer 5 out of 8 questions.

Missing data if any, may be suitably assumed.

- 1) Classify the different types sand testing methods and explain any 2 method. (10)
 - A)
 - B) With a neat sketch explain the metal Inert Gas Welding and explain its advantages and disadvantages . (10)
- 2) With a neat sketch explain Thermite welding process and its advantages. (10)
 - A)
 - B) Explain the Properties, advantages and disadvantages of hot working of metals. (10)
- 3) Estimate the actual machining time required for the component (C40 steel) (10)
 - A) shown in Fig. The available spindle speeds are 70, 110, 176, 280, 440, 700, 1100, 1760 and 2800. Use a roughing speed of 30 m/min and finish speed of 60 m/min. The feed for roughing is 0.24 mm/rev while that for finishing is 0.10 mm/rev. The maximum depth of cut for roughing is 2 mm. Finish allowance may be taken as 0.75 mm. Blank to be used for machining is 50 mm in diameter.



- B) Mention the different types of chucks used in lathe and explain any 2 types of chucks (10)
- 4) Classify the different types of drilling machine and with a neat sketch explain Radial drilling machine. (10)
 - A)

- B) Divide the periphery of the job into 69 divisions using standard index plate two of B & S type having 21,23,27,29,31,33 holes by compound indexing method. (10)
- 5) Explain the different operations of milling machine. (10)
- A)
- B) List the different type's surface grinding machines and with neat sketch briefly explain the center less grinding machine. (10)
- 6) Mention the different types of bonding materials used in grinding wheels and explain Vitrified bond. (10)
- A)
- B) Classify the lathe machine and explain any 4 operations. (10)
- 7) With neat sketch explain the working principle and operations of a shaper machine. (10)
- A)
- B) Explain the shearing process with the help of die and punch. (10)
- 8) List the different types of drilling machines and explain any four operations. (10)
- A)
- B) Categorize and explain the different types of molding sand. (10)

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