

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

Course Code: MP301

Course Name: METAL FORMING TECHNOLOGY (MP, PE)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

Marks

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| 1 | Explain the stress transformation laws. | (10) |
| 2 | a) Derive the equation for octahedral stress. | (5) |
| | b) Explain the theories of failure. | (5) |
| 3 | Explain different types rolling mills. | (10) |
| 4 | a) Explain with proper diagrams the thread rolling process. | (5) |
| | b) Describe the rolling process used to produce tubes. | (5) |

PART B

Answer any three full questions, each carries 10 marks.

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| 5 | a) Explain the piercing and hubbing processes. | (5) |
| | b) What is flashless die forging? | (5) |
| 6 | a) Explain the following processes:
i) Upsetting ii) Fullering iii) Edging iv) Cogging v) Swaging | (5) |
| | b) What are the important design parameters to be taken care of while designing a die? | (5) |
| 7 | Explain the principles of clamping. | (10) |
| 8 | Explain any two important clamping methods. | (10) |

PART C

Answer any four full questions, each carries 10 marks.

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| 9 | Explain about the types of press working dies with diagrams. | (10) |
| 10 | Explain the spring back effect and what are the methods to compensate it? | (10) |
| 11 | a) Discuss about the sheet metal operations. | (5) |
| | b) Explain about tube spinning process. | (5) |
| 12 | a) Explain stretch forming process. | (5) |
| | b) Differentiate between hot and cold extrusion process. | (5) |
| 13 | a) Explain about the equipments used in extrusion process. | (5) |
| | b) Explain how a deep drawing process is carried out? | (5) |
| 14 | a) What are the steps involved in powder metallurgy processing? | (5) |
| | b) What is a shear spinning process? | (5) |
