

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: PRODUCTION**

**SEMESTER: VI
SESSION : SP/2019**

SUBJECT : PE6001 TOOL DESIGN

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
 2. Candidates may attempt for all 30 marks.
 3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. The missing data, if any, may be assumed suitably.
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- Q1 (a) Why proper consideration of burr or chip removal is very important in jig and fixture design? [2]
(b) Calculate the diameter of diamond pin placed at 45 ± 0.15 distance from a plane surface if the locating hole in the work piece D is 55.55/55.596 and engagement width W of the pin is 2. [3]
- Q2 (a) Explain Cam and toggle clamp with neat and clean diagram. [2]
(b) Explain Location from circular surfaces with proper sketch. [3]
- Q3 (a) Explain Template and box Jig with neat and clean diagram. [2]
(b) Explain different type of quick acting clamp with suitable diagram. [3]
- Q4 (a) Explain the different type of mandrel used for production purposes. [2]
(b) What are the different components of milling fixture? [3]
- Q5 (a) Write down the design consideration for turning fixture. [2]
(b) Explain different type of indexing device used for production purposes with suitable sketch. [3]
- Q6 (a) Differentiate between the progressive die and plain die with neat diagram. [2]
(b) Explain various constructional components of a die set with the help of a neat diagram. [3]

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