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**B.E. / B.Tech. DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2011**

**MANUFACTURING ENGINEERING BRANCH**

**IV SEMESTER**

**MN 284 MANUFACTURING PROCESSES – II**

**(REGULATIONS 2004)**

1. Define the term machinability.
2. What is Taylor's tool life equation?
3. What is the difference between a blind hole and a through hole?
4. What is the difference between threading and tapping?
5. How do shaping and planing differ?
6. Identify the three basic forms of sawing operations.
7. What are the functions of a grinding fluid?
8. Define G ratio.
9. State any 4 steps that can be taken to reduce or eliminate vibration in machining.
10. What is the high-efficiency range?

**PART B – ( 5X16=80 Marks )**

- 11 i) Enumerate any three alignment tests conducted on a lathe. (8)
- ii) Discuss briefly the following cutting tool materials: (8)
- Sintered carbide      CBN
- 12 a i) Explain various mechanisms of tool wear. (8)
- ii) In an orthogonal cutting test with a tool of rake angle  $8^\circ$ , the following observations were made:
- Chip thickness ratio : 0.4
- Horizontal component of the cutting force = 1200 N
- Vertical component of the cutting force = 1600 N /

From Merchant's theory, calculate the various components of the cutting forces and the coefficient of friction at the chip tool interface. (8)

(Or)

12 b i) Describe various methods of applying cutting fluid at the cutting zone. (8)

ii) List out various methods of measuring chip-tool interface temperature and explain any one of them. (8)

13 a i) List out various operations carried out on a Lathe. Explain any four. (10)

ii) Write short notes on High speed machining. (6)

(Or)

13 b i) List out various types of drills. Describe any three of them. (8)

ii) Enumerate with neat sketch vertical boring mill. (8)

14 a i) Sketch and indicate the important parts of a horizontal milling machine. (8)

ii) Explain with neat sketches Horizontal pull broaching operation and Vertical push broaching operation. (8)

(Or)

14 b i) Describe with neat sketch kinematics of gear hobbing machine. (8)

ii) Enumerate with neat sketch the principle of quick return mechanism of shaper. (8)

15 a) write short notes on

i) Lapping (6)

ii) Ultra precision grinding (5)

iii) Bonded abrasives (5)

(Or)

15b i) Explain with neat sketches the three methods of external cylindrical centreless grinding. (8)

ii) Describe with neat sketches four types of surface grinders. (8)