



COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)
SHIVAJI NAGAR, PUNE - 411 005

END Semester Examination

(PE-207) Manufacturing Engineering-I

Course: B.Tech

Branch: Mechanical Engineering

Semester: Sem III

Year: 2014-2015

Max.Marks:60

Duration: 3 Hours Time:- ~~2-5 PM~~ 10:00 am - 1:00 pm

Date: 22 NOV 2014

Instructions:

MIS No.

--	--	--	--	--	--	--	--	--

1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper
7. All the questions are compulsory

Q.1 1) Index 73 Divisions using 'Differential Indexing'. Brown & Sharp Index (5)
plates are as follows:

Plate No. 1 – 15, 16, 17, 18, 19, 20

Plate No. 2 – 21, 23, 27, 29, 31, 33

Plate No. 3 – 37, 39, 41, 43, 47, 49

Cincinnati & Parkinson Index Plates are as follows:

First side – 24, 25, 28, 30, 34, 37, 38, 39, 41, 42, 43

Second side – 46, 47, 49, 51, 53, 54, 57, 58, 59, 62, 66

2) Explain 'Plain Dividing Head and Optical dividing head'. (5)

Q.2 1) Explain construction and working of 'Auto-feed mechanism' used in (5)
shaper with suitable figure.

2) Explain construction and working of 'Open and cross belt type quick (5)
return mechanism' used in planer.

Q.3 1) Explain 'Pull type internal Broach' using neat figure. (5)

2) Explain working of 'Tungsten Inert Gas (TIG) welding' using suitable (5)
figure.

- Q.4**
- 1) State standard marking system used for specifying the grinding wheels and explain all the terms. (5)
 - 2) State various finishing operations used in the manufacturing and explain any two briefly. (5)

Q.5 Solve any TWO:

- 1) Explain with neat sketch the taper turning operation by swiveling the compound rest. (5)
Determine the angle at which the compound rest would be swiveled for cutting a taper on a workpiece having a length of 200 mm and outside diameter 70 mm. The smallest diameter on the tapered end of the rod should be 50 mm and the required length of the tapered portion is 100 mm.
- 2) Draw the neat sketch of single point cutting tool and explain the importance of various parts. Write the tool signature. (5)
- 3) Draw the neat sketch of thread cutting mechanism used in the lathe and explain the thread cutting operation. (5)

Q.6 Solve any TWO:

- 1) Draw the neat sketch of capstan lathe and explain its advantages over centre lathe. (5)
- 2) Differentiate between drilling and boring operations. (5)
Draw the neat sketch of twist drill and explain importance of various parts.
- 3) Draw the neat sketch of Gating System used in Sand Casting Process and explain its all components. (5)