Total Marks: 80 **Duration: 3 Hours**

N.B.:-

1. Question No.1 is compulsory
2. Solve any three out of remaining questions
3. Assume suitable data if required and mention it clearly
4. Figures to right indicate full marks

Q1 A] Explain different types of tolerance grades **5**
B] Write short note on-Planning for quality. **5**
C] Explain principle of interference. **5**
D] Explain importance of surface conditions. **5**

Q2 A] Explain following:- **10**
1) Plug gauges and ring gauges
2) Filler gauges
B] Explain following parameters with respect to surface roughness measurement:- **10**
1) R_a Value
2) R_zValue
3) R_y Value
4) Roughness and Waviness

Q3 A] Explain Construction and working of Pneumatic Comparators. State their advantages and limitations. **10**
B] How will you set up policy and objectives of quality control? Explain concept of quality of design. **10**

Q4 A] Explain construction and working of Tool makers microscope with the help of suitable sketch. **10**
B] Explain following:- **10**
1) Scatter diagrams
2) Pareto Charts

Q5 A] Explain construction and working of Profile Projector. State various applications of Profile projector **10**
B] Explain following:- **10**
1) X bar Charts
2) R Charts
3) P Charts
4) Np Charts

Q6 A] Explain Principle, Construction and working of Parkinson's Gear tester **10**
B] Sketch OC curve and explain various elements of it. Also explain double sampling plans **10**