## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain scope and need of metrology

Q.22 Explain :

i) radius gauge ii) feeler gauge

Q.23 Explain concept of linear parameters alignment.

Q.24 Explain limits and fits and applications.

Q.25 Explain concept of gauges.

Q.26 Explain advantages and disadvantages of inspections.

Q.27 Explain dial gauges with diagram.

Q.28 Explain zero errors with diagram.

Q.29 Explain measurement, accuracy and precision.

Q.30 Explain micrometer and vernier caliper with diagram.

Q.31 Explain measurements.

Q.32 Explain repeatability.

Q.33 Explain tolerances and allowances.

Q.34 Explain concept of surface roughness.

Q.35 Explain principle of electronic moduling.

## SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain Mechanical comparators, profile projectors, linear height master with suitable sketch.

Q.37 Explain principle of calibration and symbols used in the surface roughness. Explain also.

Q.38 i) Explain snap and ring gauge

ii) Principle of Tayler's for designing of plain limit gauges



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**2nd Year / Advance Diploma in Tool & Die Making**

**Subject:- Engineering Metrology**

Time : 3Hrs. M.M. : 100

## SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Radius gauge used to check

a) Internal and external radius

b) Only internal radius

c) Only external radius

d) Irregular curve

Q.2 Interchangeability principle used for

a) Mass production

b) Production of identical parts

c) Parts with prescribed limit of sizes

d) All of above

Q.3 Wear allowance provided on

a) Go gauge b) No go gauge

c) Both a and b d) None

Q.4 Slip gauge are used in

a) Workshop by operator

b) Inspection room

c) Either a or b

d) Neither a or b

Q.5 Surface roughness on a drawing is represented by
a) Squares b) Curves
c) Triangles d) Zig-zag lines

Q.6 'go' and 'no go' gauge is type of
a) limit gauge b) ring gauge
c) slip gauge d) plug gauge

Q.7 Example of transition fit
a) Running b) Expansion
c) Wringing d) Shrinkage

Q.8 Clearance between mating parts is measured using
a) Dial gauge b) Go gauge
c) No-Go gauge d) Feeler gauge

Q.9 Ratchet is part of
a) Sine bar b) Dial bevel protractor
c) Clinometer d) Micrometer

Q.10 In universal micrometer rotation is in:
a) Dial indicator b) Slip gauges
c) Control shaft d) Universal microscope

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Maximum permissible error in wear of centers _____
a) 0.04mm b) 0.03mm
c) 0.02mm d) 0.01mm

Q.12 Least count of dial indicators can be calibrated using pass meter
a) 0.01mm b) 0.03mm
c) 0.05mm d) 0.07mm

Q.13 Which is not a fundamental quantity
a) Length b) Angle
c) Time d) Luminous intensity



Q.14 Which is not method of linear measurements
a) Direct measurements
b) Measurements by optical means
c) Indirect measurements
d) Electromagnetic methods

Q.15 In how many series gauges can be divided?
a) 1 b) 2
c) 3 d) 4

Q.16 Accuracy os master angle gauges
a) 0.1 second b) 1 sec
c) 0.25 sec d) 3 sec

Q.17 How many sets of angle gauges are available
a) 1 b) 2
c) 3 d) 4

Q.18 What are two grades of angle gauges
a) Master and tool room
b) Precise and normal
c) Standard and industrial
d) High and low

Q.19 Which type of CMM most suited for large heavy workpiece
a) Cantilever
b) Bridge
c) Horizontal boring mill
d) Floating bridge

Q.20 Name of elements use inductive coupling _____
a) Inducto conduct b) Inductosyn
c) Conductosyn d) Conducto Induct