



BHARTIYA SKILL DEVELOPMENT UNIVERSITY
SCHOOL OF MANUFACTURING SKILLS
1st SEMESTER, 2nd In-SEMESTER EXAMINATION
WINTER SEMESTER, B.VOC. PROGRAM
SESSION 2018-2019

Course Code: SMS1101

Time: 1 Hour

Course Name: Assembly & Measuring

Max. Marks: 20

Instruction:

1. Attempt all questions.
2. Use of Calculators is Prohibited.
3. Section A contains 05 Questions. Each question carries 1 Mark.
4. Section B contains 03 Questions. Each question carries 2 Marks.
5. Section C contains 03 Questions. Each question carries 3 Marks.

Section – A

05X1= 5 Marks

1. Which measuring instruments can be used to measure the depth of 20.00 ± 0.01 mm?
 - a. Digital Vernier callipers
 - b. Depth Micrometer
 - c. Vernier Height gauge
 - d. Depth vernier gauge
2. Which one of the following is an example of gauge?
 - a. Vernier callipers
 - b. Snap gauge
 - c. Vernier Depth gauge
 - d. None of these
3. Which one of the following least size block is available in Slip gauge block set?
 - a. 1.005 mm
 - b. 1.005 cm
 - c. 1.0005 mm
 - d. 1.050 mm
4. Which one of the following gear is used for transmit the power in perpendicular direction?
 - a. Helical gear
 - b. Spur gear
 - c. Herringbone gear
 - d. Bevel Gear



5. The shape of V belt is
- a) V shape
 - b) Triangular shape
 - c) Trapezoidal Shape
 - d) Rectangular

Section- B

02X3= 6 Marks

6. What is the difference between accuracy and precision?
7. Explain any two conditions for using set screw.
8. Calculate the least count of Bevel Protractor.

Section- C

03X3= 9 Marks

9. Describe any three types of bearings.
10. What are geometrical dimensioning & Tolerance? Why GD&T differs from Tolerances?
11. Name any Six hand tools that you used in assembly. Explain any two out of them.



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Section – A

05X1= 5 Marks

1. Which measuring instruments can be used to measure the depth of 20.00 ± 0.01 mm?
Ans. Depth Micrometer
2. Which one of the example of gauge?
Ans. Snap Gauge
3. Which one of the following least size block is available in Slip gauge block set?
Ans:- 1.005 mm
4. Which one of the following gear is used for transmit the power in perpendicular direction?
Ans Bevel Gear
5. The shape of V belt is
Ans. Trapezoidal

Section- B

02X3= 6 Marks

6. What is the difference between accuracy and precision?
Ans. Accuracy is how close a measured value is to the actual (true) value.

Precision is how close the measured values are to each other.

7. Explain any two conditions for using set screw.

Ans:-

To stop the relative motions, we can use set screw.

- (1) Shaft & Hub (2) Gear & shaft



8. Calculate the least count of Bevel Protractor.

Ans:-

Least count= Value of one division on main scale/total no of division on secondary scale
=1/12

$$=1 \times 60 / 12 \quad (1^\circ = 60 \text{ Minute})$$
$$=5 \text{ Minute}$$

Section- C

03X3= 9 Marks

9. Describe any three types of bearings.

Ans:-

1. Deep groove Ball Bearing

Relatively large size of balls, these bearings have high load carrying capacity. Due to point contact between the balls and races, frictional loss and temperature rise is less.

2. Self-aligning Bearing

Consists of two rows of balls on common spherical surface in outer race. Expensive. Permits minor angular misalignment of shaft relative to housing.

Used in agricultural machinery, ventilators, railway axle boxes.

3. Taper Roller Bearing

Consists of rolling elements in a frustum of cone.

➤ **ADVANTAGES**

Taper roller can take heavy radial and thrust load. More rigid.

Can be easily assembled & disassembled due to separable parts.

➤ **DISADVANTAGES**

Costly, Can't tolerate misalignment.

➤ **APPLICATIONS**

Cars & trucks, As a large size bearing in rolling mills.

10. What is geometrical dimensioning & Tolerancing, Why GD&T differs from Tolerances?

Ans:-

GD&T is system for defining engineering tolerances.

It is a symbolic language used in engineering drawings. GD&T is used for control the geometric features of machine parts.

Concentricity, Perpendicularity, symmetry, parallelism, run out, total run out, position etc.

With the help of tolerance we cannot control the geometry of the parts. In tolerances only we can use linear and angular tolerances.



11. Name the any Six hand tools that you used in assembly. Explain any two out of them.

1. Plier

2. Punch set

3. Circlip Plier (Internal & external)

4. Hammer

5. Combination Spanner set

5. Screw driver

6. Allen Key Set

7. Hook Spanner/C-Spanner

Circlip plier

Circlip Plier is used for setting the circlips in the grooves

Circlip can be set into internal groove or in the external groove.

Allen Key Set

Allen wrench is a tool used for drive the bolts.it will fit into the hex of the bolt head.

With Allen key we can small torque only

Each key is meant to be used with screws of a specific socket size.

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