**IE-352**

**Section 1, CRN: 48700/1/2**

**Section 2, CRN: 48706/7/8**

**Second Semester 1435-36 H (Spring-2015) – 4(4,1,2)   
“MANUFACTURING PROCESSES – 2”**

**Wednesday, February 09, 2016 (01/05/1437H)**

**Quiz 1 ANSWERS**

|  |  |
| --- | --- |
| **Name:**  **AHMED M. EL-SHERBEENY, PHD** | **Student Number:**  **4** |

**Given the following information for a shaft-hole system,**

1. **What is the basic size?** [1 Point] **ANSWER:**

(note, answer must be expressed to **3 d.p**., like in tables)

1. **What is the fit type?** [1 Point] **ANSWER:**

interference

This can be confirmed from Fundamental Deviation chart (showing holes and shafts in relative to the basic size)

1. **What is the system of units used here?** [½ Pt.] **ANSWER:**

SI/metric

SI/metric (since this involves the ISO system of tolerances)

1. **What is the basis of the fit?** [½ Pt.] **ANSWER:**

Hole Basis

Hole Basis (or Basic Hole system) this can be confirmed from the fact that

* the hole lower deviation (EI) is zero as shown in Fundamental Deviation chart
* or from table of fundamental deviations ()
* or (as in ANSI system) the fact that letter is used to assess basis ( for hole basis and for shaft basis)

1. **What is the hole MMC/ hole LMC?** [1 Point]

1. **What is the shaft MMC / shaft LMC?** [1 Point]

This is done somewhat differently than with ANSI system:

* Hole:
  + : from table of fundamental deviations: (
  + : from table of fundamental tolerances: (
* shaft:
  + : from table of fundamental deviations: (
  + : from table of fundamental tolerances: (

HOLE

SHAFT

1. **Express the hole and shaft sizes below in the specified formats** [ pt. each]

|  |  |  |
| --- | --- | --- |
|  | **Hole Size**  **LMC** | **Shaft Size** |
| 1. **Stacked Form** | **MMC** |  |
| 1. **Referenced to Basic Size Form** |  |  |

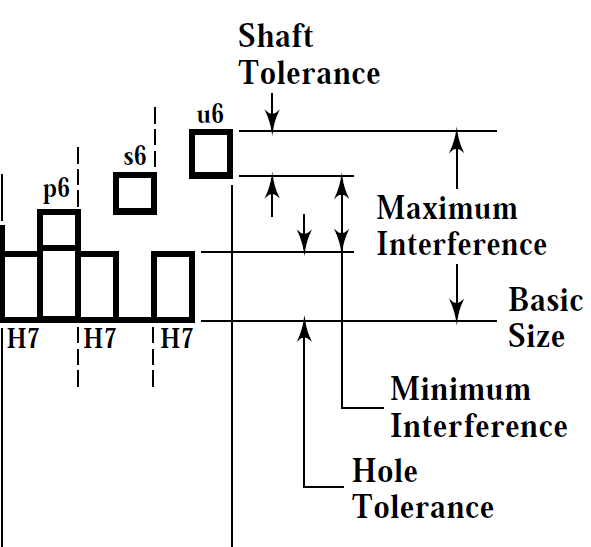
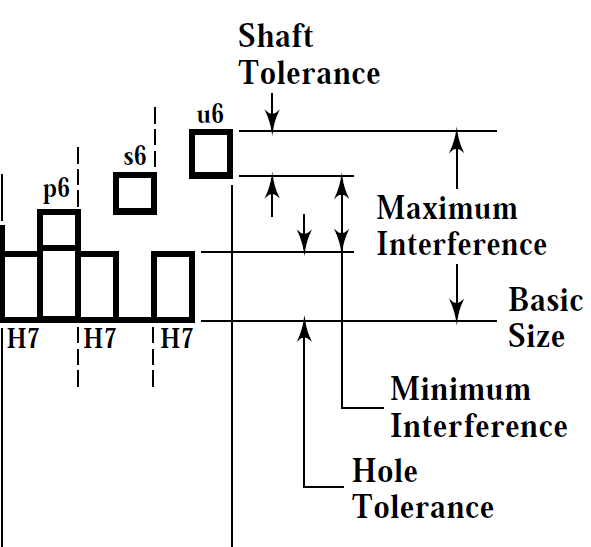
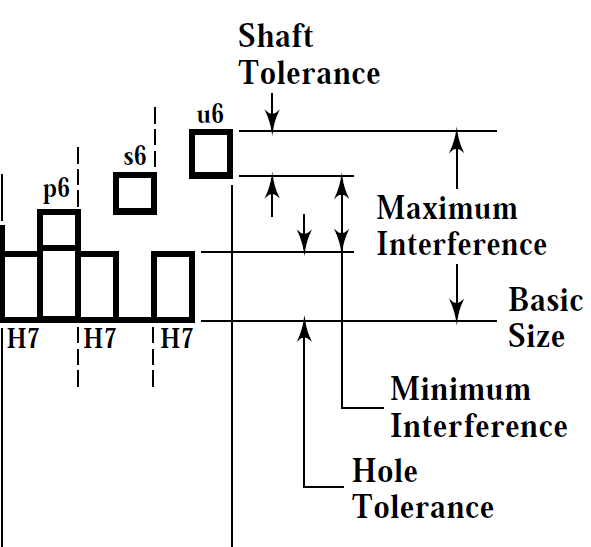
1. **What is the max., min. *interference*?** [1 Point]

These values can be confirmed from Table (where negative sign means interference)

1. **What is the max., min. *clearance*?** [1 Point]

Reason: no clearance is possible with such a fit.

1. **Sketch below the basic size, hole tolerance, and shaft tolerance.** [1 Point]



**Hole Tolerance**

**Maximum**

**Interference**

**Minimum**

**Interference**

**shaft**

**HOLE**