Marks scored:

KATHMANDU UNIVERSITY
End Semester Examination [C]
July, 2017

Level : B.E.
Year : II

Course : MEEG 219
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date JUL 14 2017

SECTION "A"
[20 Q × 1=20 marks]

Choose the most appropriate answer and mark [X].

1. To compare an unknown with a standard through a calibrated system is called
   [ ] Direct comparison [ ] Indirect comparison
   [ ] Differential comparison [ ] Null comparison

2. A set of readings has a low range and it has .....
   [ ] high precision [ ] Low precision [ ] high accuracy [ ] Low accuracy

3. The following is a line standard of measurement
   [ ] Measuring tape [ ] Slip gauge [ ] Micrometer [ ] End bars

4. Which among the following is a type of transition fit?
   [ ] Force fit [ ] Push fit [ ] Slide fit [ ] Tight fit

5. A shaft rotating in a bushed bearing is good example of
   [ ] Sliding fit [ ] Running fit [ ] Push fit [ ] Driving fit

6. Which type of errors show sinusoidal form between cumulative pitch error and length of thread?
   [ ] Periodic errors [ ] Progressive errors [ ] Irregular errors [ ] Drunken errors

7. What does allowance represent in clearance fits?
   [ ] It represents minimum clearance and is positive
   [ ] It represents maximum clearance and is positive
   [ ] It represents minimum clearance and is negative
   [ ] It represents maximum clearance and is negative

8. Which of the following statements is/are false?
   [ ] Interference is observed in tight fit
   [ ] Allowance represents minimum interference for interference fits
   [ ] Clearance is observed in push fit
   [ ] All of the above

9. What effect does pitch error have on nut and bolt?
   [ ] Major diameter of nut decreases and effective diameter of bolt increases
   [ ] Effective diameter of nut decreases and effective diameter of bolt increases
   [ ] Effective diameter of nut increases and effective diameter of bolt decreases
   [ ] None of the above

10. ..... angle is the angle between the tooth profile where it cuts the pitch circle and line joining that point to the centre of the pitch circle.
[ ] Pressure [ ] Flank [ ] Tooth fillet [ ] None of the above

11. Following is the theoretical size which is common to both the parts of a mating pair
[ ] Normal size [ ] Actual size [ ] Base size [ ] All of the above

12. ..... is the bottom surface joining the two sides of a thread.
[ ] Root [ ] Crest [ ] Fillet [ ] Core

13. 'GO' and 'NO GO' gauge is a type of
[ ] plug gauge [ ] slip gauge [ ] ring gauge [ ] limit gauge

14. In v-shape method, the minor diameter of thread is given by
[ ] $D \pm (d2 - d1)$ [ ] $D \pm (d1 - d2)$ [ ] $D \pm (d2 + d1)$ [ ] None of the above
Where, D = Diameter of cylindrical gauge, d1 = micrometer reading of cylindrical gauge, d2 = micrometer reading of threads, d = minor diameter

15. A high-grade of slip gauges preserved in a factory and not put into general use would be
[ ] Primary Standard [ ] Secondary Standard
[ ] Tertiary Standard [ ] Working Standard

16. ..... gearing is smooth and quite
[ ] Spur [ ] Helical [ ] Bevel [ ] Worm

17. Expressing a dimension as $10^{+0.00}_{-0.02}$ mm is the case of
[ ] Bilateral tolerance [ ] Unilateral tolerance
[ ] Limiting dimensions [ ] None of the above

18. ..... is the width of the recess between the two adjacent teeth measured along the pitch circle.
[ ] Tooth fillet [ ] Roundness [ ] Backlash [ ] Tooth space

19. ..... lead screws are commonly used on lathes.
[ ] Acme thread [ ] Knucble thread [ ] Square thread [ ] V thread

20. The ..... teeth can be generated easily and accurately in gear cutting machines
[ ] Cyclodial [ ] Asymptotes [ ] Involute [ ] Epicyclodial

KATHMANDU UNIVERSITY
End Semester Examination [C]
July, 2017

JUL 14 2017

Level : B.E.
Year : II
Time : 2 hrs. 30 mins.

Course : MEEG 219
Semester : I
F. M. : 55

SECTION "B"

Attempt *ALL* the questions.

1. Differentiate accuracy and uncertainty with example. [2]

2. Write short note on: [2]
   a. Yard
   b. Meter

3. List different parameter of static characteristics in instrument. [2]

4. Define backlash in micrometer. [2]

5. State how surface finish is designated on drawings. [3]

6. What are the sources of error in sine bars? [2]

7. Differentiate between V and Square thread. [2]

8. What is the effect of flank angle error in screw thread and gear measurement? [2]

9. Explain system of obtaining different type of fits. [3]

10. What are the types of profile checking method in gear measurement? [2]

11. Explain with the help of neat sketch, the principle and construction of a vernier depth gauge. [6]

12. Discuss briefly about the pitch errors in thread with neat sketch? [4]

13. Explain pictorially The Tomlinson Surface Meter for surface finish measurement. [3]

14. Describe the following methods of measuring the major diameter of screw thread with a neat sketch. [6]
   a. Ordinary Micrometer
   b. Bench Micrometer

15. Write short note on: [6]
   a. Combination Square
   b. Sprit Level
   c. Profile Projector

16. Describe briefly the following method of tooth thickness measurement [8]
   a. Base Tangent Method
   b. Constant Cord Method