Marks Scored:

KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2017

Level : B.E.
Year : II
Course : MEEG 213
Semester : I
Exam Roll No. :
Time : 30 mins.
F. M. : 10
Registration No. :
Date : MAR 3 0 2017

SECTION "A"
[20 Q. × 0.5 = 10 marks]

Cross [×] mark the most appropriate answer.

1. In a planimetric procedure of 100 × magnification for grain size determination the ASTM grain size number, G, can be calculated from actual number of grains per square mm, N_a, using the equation_____
[ ] $N_a = 2 (G - 1)$
[ ] $G = 2^{(Na - 1)}$
[ ] $G = 3.321928 \log_{10} N_a) - 2.954$
[ ] $N_a = 2^G$

2. Which of the following is not considered a compressive surface stress method for improving fatigue life?
[ ] chamfering [ ] shot peening [ ] filleting [ ] carburizing

3. Chevron markings in the failed material indicates_____
[ ] ductile fracture
[ ] fatigue Fracture
[ ] brittle fracture
[ ] corrosion failure

4. Which of this iron form exhibit non-magnetic properties?
[ ] austenite [ ] martensite [ ] ferrite [ ] pearlite

5. During a/ an _____ heat treatment the core possess higher temperature than the surface.
[ ] stepped quenching
[ ] internal tempering
[ ] self tempering
[ ] austempering

6. _____is responsible for protective coatings on industrial bearings.
[ ] Monel [ ] Inconel [ ] Nickel [ ] Babbitt Metal

7. The miller indices of a plane along Y and Z direction is zero. Which of the following is true?
[ ] the plane is parallel to Y-axis
[ ] the plane is parallel to Z-axis
[ ] the plane is parallel to X-axis
[ ] the plane is perpendicular to X-axis

8. The lowest relative length of stream in spark test is seen in _____
[ ] white cast iron
[ ] grey cast iron
[ ] nickel
[ ] cemented tungsten carbide

9. _____ is the separation of an object or material into two, or more, pieces under the action of stress?
[ ] Fracture [ ] Failure [ ] Rupture [ ] Coercivity

10. The highest strength-to-density ratio of any known metals belongs to _____
[ ] molybdenum [ ] tungsten [ ] vanadium [ ] titanium

11. Which of the following is not the basic component of Material Science?
[ ] cost [ ] structure [ ] performance [ ] property

12. _____is a deformation of a section of crystal where it takes a new orientation but still retains the parent crystal structure?
[ ] Screw dislocation [ ] Twinning [ ] Glide [ ] Poly-crystallizing

13. _____implies the point when a solid upon cooling transforms into two solids at one invariant point in phase diagram.
[ ] Hyper Eutectoid [ ] Eutectoid [ ] Hyper Eutectic [ ] Eutectic

14. _____bonding has the highest melting point.
[ ] Ionic [ ] Covalent [ ] Metallic [ ] Coordinate

15. The minimum number of ions in the unit cell of an ionic crystal with FCC space lattice is _____
[ ] 4 [ ] 8 [ ] 12 [ ] 16

16. For hydrogen bonding, highly polar molecules form when hydrogen _____ bonds to a _____ element such as fluorine.
[ ] ionic, metallic [ ] ionic, non-metallic
[ ] covalent, non-metallic [ ] covalent, metallic

17. The stiffness is the ability of a material to resist
[ ] deformation under stress
[ ] fracture due to high impact loads
[ ] externally applied forces with breakdown or yielding
[ ] penetrative or abrasive forces

18. _____causes transformation of deformed martensite into austensite phase.
[ ] pressurizing [ ] rapid cooling [ ] heating [ ] simmering

19. Which of this is not a destructive testing method?
[ ] impact test [ ] creep test
[ ] spark test [ ] dye penetration test

20. In which type of point defect, positive and negative ions are missing from the crystal?
[ ] vacancy [ ] interstitial [ ] schottky [ ] substitutional