

KATHMANDU UNIVERSITY
End Semester Examination [C]
November/December, 2023

Marks Scored:

Level : B.E./B.Sc./B.Tech.

Course : ENGG 111

Year : I

Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

06 DEC 2023

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose and mark [X] the most appropriate answer.

1. If the resultant of the two forces has the same magnitude as either of the forces, then the angle between the two forces is
 30° 60° 90° 120°
2. A body of mass 5kg is moving with a uniform velocity of 20m/s. The net force on the body if measured after 10 seconds is
 10 N 5 N 0 N 20 N
3. For two bodies A & B in contact at a point, while drawing the FBD of A, contact reaction is
 from A towards B
 from B towards A
 perpendicular to the line joining center of masses of A and B
 There is no contact reaction
4. _____ is the slope of the stress-strain curve in the elastic deformation region.
 Poisson's ratio Elastic modulus Elasticity Ultimate stress
5. Which of the following statement is **INCORRECT**?
 Arch dam is suitable for any site
 Arch dam is suitable for narrow George with strong rock in abutment and foundation
 Gravity dam resist water load by self-weight
 Arch dam resist water load by its arch action
6. Which of the following statement is **INCORRECT** about foundation?
 For strong soil any type foundation is suitable.
 If top soil is weak and load is to be transferred to lower layer of soil, pile is suitable.
 Mat is suitable if top soil is weak and there is possibility of uneven settlement.
 For wall, Combined RCC foundation is suitable.
7. About the building material, incorrect statement is
 Stone is naturally available material
 Sand may be artificial and natural
 Cement is good in binding
 Sand is good in strength and also good in binding

8. The dam section which does not resist load by its self-weight is known as
 Arch dam Gravity dam made up of Concrete
 Earth and Rock fill Embankment dam Gravity dam made up of masonry
9. The length of Engineer's chain is
 20 meters 100 feet 66 feet 33 feet
10. Trunnion Axis is also known as _____
 Line of Sight Line of Collimation
 Vertical Axis Horizontal Axis
11. If back bearing of line is N165°W, its fore bearing is
 S165°W S165°E N165°E N355°W
12. QZSS is _____ satellite system
 Global Provincial Regional International
13. Viscosity of a fluid is an
 intensive property because it depends on the mass
 extensive property because it depends on the mass
 intensive property because it does not depend on the mass
 extensive property because it does not depend on the mass
14. If V_C is clearance volume and V_S is stroke volume, compression ratio is given by
 $\frac{V_C}{V_S}$ $\frac{V_S}{V_C}$ $\frac{V_C}{V_C+V_S}$ $\frac{V_C+V_S}{V_C}$
15. The Carnot cycle comprises of
 four adiabatic processes
 two adiabatic processes and two isothermal processes [heat added and rejected during the adiabatic processes]
 two adiabatic processes and two isothermal processes [heat added and rejected during the isothermal processes]
 four isothermal processes
16. During the power stroke in Otto cycle
 piston moves from TDC to BDC and both inlet and exhaust valves are closed
 piston moves from BDC to TDC and both inlet and exhaust valves are closed
 piston moves from TDC to BDC, only inlet valve is open
 piston moves from TDC to BDC, only exhaust valve is open
17. The value of the compressibility of an ideal fluid is
 zero unity
 infinity more than that of a real fluid
18. Which of the following is **CORRECT**?
 A streamline can intersect itself and two streamlines can cross.
 A streamline cannot intersect itself but two streamlines can cross.
 A streamline can intersect itself but two streamlines cannot cross.
 A streamline cannot intersect itself and two streamlines cannot cross.

06 DEC 2023

19. The specific gravity of a liquid has
 the same unit as that of mass density the same unit as that of weight density
 the same unit as that of specific volume no unit
20. Which of the following statement is **TRUE** in case of impulse turbines?
 Hydraulic energy is partially converted into kinetic energy before transformation in the runner.
 Hydraulic energy is completely converted into pressure energy before transformation in the runner.
 Hydraulic energy is completely converted into kinetic energy before transformation in the runner.
 Hydraulic energy is directly converted to electrical energy without transformation in the runner.

