

KATHMANDU UNIVERSITY  
End Semester Examination [C]  
June, 2018

Marks scored:

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

Course : ENGG 111  
Semester : I

Exam Roll No. :  
Registration No.:

Time: 30 mins

F. M. : 20  
Date JUN 17 2018

SECTION "A"  
[20 × 1=20 marks]

Choose the most appropriate answer and mark [X].

- Carnot cycle is  
 An ideal hypothetical cycle  Both a and b  
 Reversible cycle  none of the above
- Fluid is a substance which offers no resistance to change of  
 Pressure  Flow  Shape  Volume
- Frictional effect between layers of flowing fluid is known as  
 friction  viscosity  
 gravity  surface tension
- Water flowing through hose having diameter 1 cm at speed of  $1 \text{ ms}^{-1}$ , if water is to emerge at  $21 \text{ ms}^{-1}$ , diameter of nozzle should be  
 0.2 cm  0.1 cm  0.02 cm  0.01 cm
- Strain energy is the  
 energy stored in a body when strained within elastic limits  
 energy stored in body when strained upto the breaking of a specimen  
 maximum strain energy which can be stored in a body  
 proof resilience per unit volume of a material
- The resultant of two forces each equal to P and acting at right angles is  
  $P/\sqrt{2}$    $P/2$    $P/2\sqrt{2}$    $\sqrt{2}P$
- Which of the following is correct  
 Absolute pressure = Gauge pressure + Atmospheric pressure  
 Gauge pressure = Absolute pressure + Atmospheric pressure  
 Atmospheric pressure = Absolute pressure + Gauge pressure  
 Absolute pressure = Gauge pressure - Atmospheric pressure
- Absolute zero temperature is taken as  
  $-273^\circ\text{C}$    $273^\circ\text{C}$    $237^\circ\text{C}$    $-373^\circ\text{C}$

9. A definite area or space where some thermodynamic process takes place is known as  
 Thermodynamic system  Thermodynamic process  
 Thermodynamic cycle  Thermodynamic law
10. The total of all the masses of small particles adds up to give the total body mass of the composite body. This mass lies along with gravity gives a force vector which is being passed by \_\_\_\_\_  
 Axis of rotation  Centre of Gravity  
 Axis of rolling  Centre of mass
11. Which of the following represents the energy in storage?  
 heat  internal energy  
 work  none of the mentioned
12. A first class brick should not absorb water more than ..... of its own dry weight after 24 hours' immersion in cold water.  
 10 %  15 %  20 %  25 %
13. The slope of pitched roof ranges from  
 30° to 45°  60° to 70°  
 45° to 60°  70° to 80°
14. According to NRS (Nepal Road Standard) the span of culvert is  
 >3 m  <3 m  >6 m  <6 m
15. For nominal mix design of M20 concrete, the ratio of cement: sand: concrete is  
 1:2:4  1:1:2  1:1.5:3  1:3:6
16. An advantage of plane tabling is  
 It is a tropical instrument  Plotting is done outdoor  
 It has many accessories  Chances to miss details are less
17. Line of collimation  
 is the same as line of sight.  
 The line joining point of intersection of cross hairs and optical centre of object glass  
 The geometrical axis of telescope  
 The line parallel to the bubble tube axis.
18. The contour interval on a map sheet denotes  
 Vertical distance of contour lines above the datum plane.  
 Vertical distance between two successive contour lines.  
 Slope distance between two successive contour lines.  
 Horizontal distance between two successive contour lines.

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19. A tie line is run

- To check the accuracy of fieldwork.
- To locate detail which are far away from main survey line.
- Between main survey stations.
- Parallel to the survey line.

20. The latitude of a line is its length multiplied by

- Tangent of bearing.
- Cosine of bearing.
- Sine of bearing.
- Cotangent of bearing.

