KATHMANDU UNIVERSITY
End Semester Examination
March, 2024

Marks Scored:

Level : B.Arch. | Course : ARCH 201
Year : II | Semester : I
Exam Roll No. : | Time: 30 mins. | F. M. : 10
Registration No.: | Date : 01 APR 2025

SECTION "A"
[20Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate answer.

1. Climate of a restricted area is known as _____.
   a. weather b. micro climate c. macro climate d. rural climate

2. Cool temperate zone lies between_____ m.
   a. 0-1200 b. 1200-2400 c. 2400-3600 d. 3600-4400

3. Mills powered by wind and water was in use for _____ years.
   a. 1000 – 2000 b. 2000 – 3000 c. 3000 – 4000 d. 4000 – 5000

4. The word energy was derived from _____.
   a. enerzos b. kinetics c. energos d. energia

5. Building use energy in _____ stages of its life cycle.
   a. early b. late c. useful d. all

6. What percentage of water for consumption is wasted and lost?
   a. 25 b. 50 c. 75 d. 100

7. The first water treatment technology for urban supply was developed by _____.
   a. Minoan b. Greek c. Mycenaean d. Roman

8. ____ % of human adult body consists of water.
   a. 40 b. 50 c. 60 d. 70

9. Waste from waste water treatment is called _____.
   a. Domestic waste b. Agriculture waste c. Sewage sludge d. Garbage sludge

10. Design area requirement for vertical subsurface flow is _____ m^2/PE
    a. 5-10 b. 3-5 c. 2-3 d. 2.5-3

11. According to corrosion chemistry, corrosion is formed on the _____.
    a. cathode b. anode c. cations d. anions

12. Corrosion that leaves a scale or deposit over entire exposed area is called _____ corrosion.
    a. pit b. uniform c. transgranular d. stress

13. The annual specific primary energy demand for Passivhaus is _____ Wh/m^2
a. 60 b. 100 c. 120 d. 200

14. The primary country of use of the High Quality Environmental Standard is _____.
a. China b. Germany c. Australia d. France

15. In isolated passive solar design, cooling can be done by using _____.
a. heat collectors b. heat sinks c. heat absorbers d. heat reflectors

Fill in the blanks with appropriate answer.

16. The symbol ε denotes _____ angle.

17. We receive both light and heat from the _____.

18. In 17th Century _____ carried out the modern version of water purification experiments.

19. Waste is _____ raw material in the wrong place.

20. In cathodic protection the sacrificial metal gives out electrons and gets _____.

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SECTION "B"
[5Q. × 3 = 15 marks]

Students are encouraged to support their answers with necessary figures, illustration and drawings.

Attempt ***ANY FIVE*** questions.

1. What is climatology and what are its objectives?
2. Describe in brief the history of energy use.
3. What are the requirements of a good water supply system?
4. How did the traditional waste management system worked in Kathmandu Valley?
5. What is the difference between rust and corrosion?
6. When designing in Nepal, what are the bioclimatic factors that affect our designs?

SECTION "C"
[5 Q. × 5 = 25 marks]

Attempt ***ANY FIVE*** questions. **(Q.N. 7 is compulsory.)**

7. Based on the solar chart, it is required to shade the sun on May 21 at 14.00 hours.If the orientation of the window is 30 west of south, find the vertical shadow angle and length of the shading projection. Use the solar chart given below.
8. What is the most used fuel in Nepal? How would you categorize it? [1+4]
9. Describe the non-renewable energy forms.
10. What is water purification system? Describe briefly the municipal water treatment system. [1.5+3.5]
11. Describe the waste water treatment system.
12. How can corrosion be prevented?
13. What is green building? Describe its principles. [1+4]

P.T.O.

(c) Univ. of Oregon SRML
Sponsor: BPA
Lat: 27.9; Long: 86.9
(Solar) time zone: 5.5

Estimated annual AC output.