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Question Paper Code: 52006

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Second Semester

Civil Engineering

15UPH206–BUILDING PHYSICS

(Regulation 2015)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The modulus of elasticity is dimensionally equivalent to _____. CO1- R
(a) Strain (b) Stress (c) Surface tension (d) Viscosity
2. Poisson's ratio is the ratio between _____. CO1- R
(a) Lateral contraction per unit stress and longitudinal elongation per unit stress
(b) Young's modulus and rigidity modulus
(c) Lateral contraction per unit stress and longitudinal elongation per unit stress
(d) Young's modulus and rigidity modulus
3. Among the different characteristics of musical sound which is primarily dependent on the wave form? CO2- R
(a) Pitch (b) Timbre (c) Intensity (d) Loudness
4. An open window is a perfect _____. CO2- R
(a) Reflector of sound (b) Absorber of sound
(c) Transmitter of sound (d) Scatterer
5. Which among the following is the last step in magnetic particle test method? CO3- R
(a) Observation and inspection (b) Demagnetization
(c) Magnetization (d) Circular magnetization

6. Which of the following methods of inspection uses high frequency of sound waves for the detection of flaws in the castings? CO3- R
- (a) Penetrant test (b) Ultrasonic inspection
(c) Pressure test (d) Radiography
7. Which is the case of forced vibrations? CO4- R
- (a) Sound produced in flute
(b) Sound produced in organ pipe
(c) Vibrations produced in piano string
(d) Vibrations produced in telephone transmitter during conversion
8. Which of the following properties of wave is independent of the other? CO4- R
- (a) Velocity (b) Wavelength (c) Amplitude (d) Frequency
9. Which of the following methods can be used to produce nano-powders of oxides? CO5- R
- (a) Sol-gel technique (b) Chemical vapour deposition
(c) Mechanical crushing (d) Plasma arching
10. Scanning electron microscopy helps us to _____. CO5- R
- (a) See the surface texture of a sample (b) See the inside of a sample
(c) See the atoms of a sample (d) See the electrons of a sample

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Examine the elastic behavior of a material using stress strain diagram. CO1- U (8)
12. Analyze Sabine's formula for the reverberation time of an auditorium. CO2- Ana (8)
13. Draw a block diagram of ultrasonic flaw detector and analyze each one of its components. CO3- Ana (8)
14. Define damped harmonic oscillations. Discuss the effect of damping on oscillatory motion. CO4- U (8)
15. Discuss ball milling technique to synthesize nanomaterials. CO5- U (8)