



MBW-001-005404 Seat No. _____

Second Year B. A. (ID) (Sem. IV) (CBCS) Examination

April / May - 2018

Building Science - II

(Acoustics)

Faculty Code : 001

Subject Code : 005404

Time : 2 Hours]

[Total Marks : 50

- Instructions :** (1) All questions are compulsory.
(2) Any ambiguity will be considered as a wrong answer.

1 Choose the correct answer : 10

- (1) Which of this is not a good sound absorber?
(A) Glass wool (B) Choir
(C) Cork (D) None
- (2) Speakers for the auditorium or theater should be placed at...
(A) Symmetrical and just above ear level
(B) All over the space below ear level
(C) Mounted in ceiling and wall.
(D) Symmetrical and just below ear level
- (3) Which surface has maximum sound absorbent quality?
(A) Exposed brick wall (B) Glass partition wall
(C) Wooden partition (D) Stone wall
- (4) Sound travels faster through _____ than _____
(A) Air (B) Water
(C) Solid (D) liquid

- (5) Which one is acoustically good material for interior spaces?
- (A) Plaster of Paris (B) R.C.C
(C) Plastic paint (D) Wood
- (6) Reverberation time is measured in which unit?
- (A) Sq. feet (B) Kilometer
(C) Hour (D) Second
- (7) Acoustic design improves which of the following quality to enclosed area ?
- (A) Better visual appearance
(B) Light reflection
(C) Better sound quality
(D) Better resolution of services
- (8) Which of the following does not affect the acoustic of interior space?
- (A) Volume of the space
(B) Length width ratio
(C) Material used for surface treatment
(D) Orientation of room or hall
- (9) Angle of reflected sound is _____ to sound applied to surface.
- (A) Equal (B) More than
(C) Less than (D) More
- (10) Material with more mass block sound
- (A) Less
(B) More
(C) Depends on sound quality
(D) Depends on material quality

2 Fill in the blanks : **10**

- (1) Sound travels in the air at ordinary temperature and pressure with a speed of _____
- (2) Sound cannot travel in _____
- (3) The highest audible sound has a frequency of _____
- (4) The frequency is a measure of the _____ of sound.
- (5) Sound whose frequency is below that of human hearing, below 20 Hz is known as _____ sound.
- (6) Sound whose frequency is below that of human hearing, above 20,000 Hz is known as _____ sound.
- (7) The speed of sound in air at sea level is approximately _____
- (8) Sound absorption coefficient describes the efficiency of _____ or _____ to absorb the sound.
- (9) The _____ the frequency the _____ the wavelength.
- (10) The absorption coefficient varies with the _____ of sound.

3 Write the definitions : (Any Ten) **10**

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|--------------|---------------|--------------------|
| Acoustics | Sound (waves) | Sound level |
| Flutter Echo | Reverberation | Reverberation time |
| NRC Rating | Frequency(f) | Diffusion |
| Absorption | Ultrasonic | Infrasonic |

4 Answer the following questions : (Any Five) **10**

- (1) What are the characteristics of sound?
- (2) At what level does sound become unsafe?
- (3) Describe the nature of sound.
- (4) Describe the transmission of sound between rooms.
- (5) Give some transmission tips.

- (6) Write basic elements of 'acoustics design.
- (7) Describe in detail sound absorption coefficient.

5 Describe in brief : (Any **Two**) **10**

- (1) What is the difference between insulation and absorption?
 - (2) Draw construction detail of wall/partition, door/window, ceiling and flooring for acoustical treatment.
 - (3) Write design criteria for acoustics.
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