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Reg.No :

Name :

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
MGU-UGP (HONOURS) REGULAR /IMPROVEMENT/ REAPPEARANCE
EXAMINATION NOVEMBER 2025
FIRST SEMESTER

Discipline Specific Core Course (DSC) - MG1DSCSDV100 - FUNDAMENTALS OF
ACOUSTICS
(2024 ADMISION ONWARDS)

Duration: 2 Hours

Maximum Marks: 70

Remember(K), Understand(U), Apply(A), Analyse(An), Evaluate(E), Create(C), Skill(S), Interest(I) and Appreciation(Ap)

Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.

Part A

Very short answer Questions

Answer any **10** Questions

Each Question carries **2** marks

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|--|--------------|
| 1. what is the amplitude of an sound wave ? | [U] / [CO1] |
| 2. How does sound travel differently in air compared to water? | [An] / [CO3] |
| 3. How does diffraction help us hear sounds from different directions? | [A] / [CO4] |
| 4. Why are critical bands important in sound perception? | [K] / [CO6] |
| 5. What is the speed of sound in Air in relation with temperature ? | [U] / [CO1] |
| 6. what will happen if two sound waves are In' In phase' ? | [An] / [CO1] |
| 7. Give an example of a complex sound and briefly describe its characteristics | [K] / [CO2] |
| 8. Describe the relationship between density and elasticity. | [An] / [CO3] |
| 9. What are the crest and trough of a transverse wave? | [U] / [CO1] |
| 10. What is sound absorption? | [U] / [CO5] |

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|--|-------------|
| 11. What happens when two sound waves meet and interfere constructively? | [U] / [CO4] |
| 12. what is frequency domin masking? | [K] / [CO6] |

[10x2 = 20]

Part B

Short Answer Questions

Answer any **6** Questions

Each Question carries **5** marks

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|--|--------------|
| 13. expalin frequency range of humen hearing | [U] / [CO6] |
| 14. Compare the effects of too much and too little sound reflection in an auditorium. | [An] / [CO4] |
| 15. What is a wave Equation ? | [U] / [CO1] |
| 16. Describe how the attack and decay phases of a sound envelope can influence the perception of rhythm and dynamics in music. | [An] / [CO2] |
| 17. how we can sound proof a room ? | [A] / [CO5] |
| 18. Compare how sound propagates in air versus water. | [An] / [CO4] |
| 19. How does frequency affect the perception of pitch, and what is the importance of this in speech communication? | [U] / [CO6] |
| 20. What is pitch ? How frequency related with pitch ? | [An] / [CO1] |
| 21. what is the function of eustachian tube? | [U] / [CO6] |

[6x5 =30]

Part C

Essay Questions

Answer any **2** Questions

Each Question carries **10** marks

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|--|--------------|
| 22. What are the characteristics of a sound wave . explain with illustaration ? | [U] / [CO1] |
| 23. What are the factors that influence acoustic impedence, and how do these factors affect the efficiency of sound transmission? | [An] / [CO5] |
| 24. Describe the relationship between amplitude, loudness, and the decibel scale, and explain how they are used to measure and perceive sound. | [A] / [CO6] |

[2x10=20]