

NEET WAVES — BEATS — PYQS

Max. Marks: 36

Questions: 9

Section A (MCQ) — 9 questions

- Q.1** In a guitar, two strings A and B made of same material are slightly out of tune and produce beats of frequency 6 Hz. When tension in B is slightly decreased, the beat frequency increases. If the frequency of A is 530 Hz, the original frequency of B will be : [NEET (UG) 2020]
(1) 524 Hz (2) 536 Hz (3) 537 Hz (4) 523 Hz

Scan or tap for the full solution



- Q.2** Three sound waves of equal amplitudes have frequencies $(n - 1)$, n , $(n + 1)$. They superimpose to give beats. The number of beats produced per second will be [NEET 2016 (Phase 2)]
(1) 1 (2) 4 (3) 3 (4) 2

Scan or tap for the full solution



- Q.3** A source of unknown frequency gives 4 beats/s when sounded with a source of known frequency 250 Hz. The second harmonic of the source of unknown frequency gives five beats per second, when sounded with a source of frequency 513 Hz. The unknown frequency is [NEET 2013]
(1) 240 Hz (2) 260 Hz (3) 254 Hz (4) 246 Hz

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- Q.4** Two sources of sound placed close to each other, are emitting progressive waves given by $y_1 = 4\sin 600\pi t$ and $y_2 = 5\sin 608\pi t$. An observer located near these two sources of sound will hear [AIPMT 2012 (Prelims)]
(1) 4 beats per second with intensity ratio 25 : 16 between waxing and waning.
(2) 8 beats per second with intensity ratio 25 : 16 between waxing and waning.
(3) 8 beats per second with intensity ratio 81 : 1 between waxing and waning.
(4) 4 beats per second with intensity ratio 81 : 1 between waxing and waning.

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- Q.5** Two identical piano wires, kept under the same tension T have a fundamental frequency of 600 Hz. The fractional increase in the tension of one of the wires which will lead to occurrence of 6 beats/s when both the wires oscillate together would be

[AIPMT 2011 (Mains)]

(1) 0.01 (2) 0.02 (3) 0.03 (4) 0.04

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- Q.6** A tuning fork of frequency 512 Hz makes 4 beats per second with the vibrating string of a piano. The beat frequency decreases to 2 beats per sec when the tension in the piano string is slightly increased. The frequency of the piano string before increasing the tension was [AIPMT 2010 (Prelims)]
(1) 510 Hz (2) 514 Hz (3) 516 Hz (4) 508 Hz

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- Q.7** Each of the two strings of length 51.6 cm and 49.1 cm are tensioned separately by 20 N force. Mass per unit length of both the strings is same and equal to 1 g/m. When both the strings vibrate simultaneously the number of beats is

[AIPMT 2009]

(1) 7 (2) 8 (3) 3 (4) 5

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- Q.8** Two vibrating tuning forks produce waves given by $y_1 = 4\sin 500\pi t$ and $y_2 = 2\sin 506\pi t$. Number of beats produced per minute is [AIPMT 2006]
(1) 360 (2) 180 (3) 60 (4) 3

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- Q.9** Two sound waves with wavelengths 5.0 m and 5.5 m respectively, each propagate in a gas with velocity 330 m/s. We expect the following number of beats per second. [AIPMT 2006]
(1) 6 (2) 12 (3) 0 (4) 1

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9		
Ans.	1	4	3	4	2	4	1	2	1		