

1. (**B**) What is the 2nd inversion of the G minor chord? (A) G, Bb, D, (B) D, G, Bb, (C) Bb, D, G, (D) G, B, D, (E) none of the above.

G minor chord: G, Bb, D → 1st Inversion: Bb, D, G → 2nd Inversion: D, G, Bb

2. (**B**) A triad consists of three notes: A, C, F#. Which chord is it? (A) the 1st inversion of A minor, (B) the 1st inversion of F# diminished, (C) the 2nd inversion of C minor, (D) A diminished, (E) none of the above.

F# diminished chord: F#, A, C → 1st Inversion: A, C, F#

3. (**C**) The time signature for three eighth notes per measure should be (A) 3/4, (B) 4/3, (C) 3/8, (D) 8/3, (E) none of the above.

See handout: 10a – Music theory, MIDI.

4. (**D**) Refer to the note shown on the right. Which note is it? (A) half note, (B) quarter note, (C) eighth note, (D) sixteenth note, (E) none of the above.



See handout: 10a – Music theory, MIDI.

5. (**E**) Which of the following information is not included in a MIDI note? (A) when the key is pressed/released, (B) pitch of the note, (C) how fast and hard the key is pressed, (D) length of time the key is depressed, (E) what harmonic components are in the note.

See handout: 10a – Music theory, MIDI.

6. (**D**) Which of the follow statements regarding labor theory is incorrect? (A) Surplus value is produced by labor and exploited by firms. (B) Creative labor seems to resist exploitation by creating another kind of un-exploitable value for workers. (C) Music production/consumption is relatively autonomous from capitalism. (D) The value of music/musicians is measured in terms of the pleasure of creativity. (E) none of the above.

See Sakai handout: Ethics and the Music Industry.pptx.

7. (**A**) Which of the follow statements regarding organization theory is incorrect? (A) Organizations are defined as government units that are structured to control commercial activities. (B) The music industry is a system within an environment. (C) The most important environment is the market. (D) Key market forces contain both centralization and de-centralization components. (E) none of the above.

See Sakai handout: Ethics and the Music Industry.pptx.

8. (**C**) Which of the following is not a potential solution to facilitate a fair system for streaming music? (A) artist-centered services such as Tidal or Bandcamp, (B) semi-direct patronage such as pay-what-you-want, (C) complete subsidization of music streaming by the governments, (D) replacing “big pool” with “ethical pool” revenue share, (E) none of the above.

See Sakai handout: Ethics and the Music Industry.pptx.

9. (**B**) Which of the following statements regarding the theremin is incorrect? (A) The theremin is the first mass produced electronic musical instrument. (B) The proximity of the hand is detected by use of an ultrasound sensor. (C) The inventor Le on Theremin was involved in espionage activities during the cold war era. (D) Similar concept and technologies have been used in modern day devices such as RFID's and transponders. (E) none of the above.

See handout: 12e – Theremin.

10. (**D**) Based on the sound source the woodwind instruments are classified into three types. Which of the following is not one of them? (A) air-jet, (B) single-reed, (C) double-reed, (D) lip-vibration, (E) none of the above.

See handout: 12d –The Acoustics of Woodwind Musical Instruments.

11. (**C**) Which type of the woodwind instruments does the bassoon belong to? (A) air-jet, (B) single-reed, (C) double-reed, (D) lip-vibration, (E) none of the above.

See handout: 12d –The Acoustics of Woodwind Musical Instruments.

12. (**A**) The relationship between the bore length (L) of a double-open-end flute, the speed of sound (c), and the frequency (f) is given by $f = c / (2L)$. The speed of sound in air is $c = 13504$ in/s. If the bore length is 15 in, what is the frequency of the sound produced? (A) 450 Hz, (B) 475 Hz, (C) 500 Hz, (D) 550 Hz, (E) none of the above.

See handout: 12d –The Acoustics of Woodwind Musical Instruments.

$$f = c / (2L) = 13504 / (2 \times 15) = 450 \text{ Hz}$$

13. (**C**) The middle ear contains three small bones to transfer the sound waves mechanically. Which of the following is not one of them? (A) malleus, (B) incus, (C) patella, (D) stapes, (E) none of the above.

See handout: 06a – Auditory system - anatomy and physiology. The three middle-ear bones are malleus (hammer), incus (anvil), and stapes (stirrup). Petella is the kneecap.

14. (**A**) Which of the following statements regarding the cochlear is incorrect? (A) The base of the stapes couples vibrations into the cochlea via the tympanic window. (B) The cochlear forms a cone, approximately 9 mm in diameter at its base and 5 mm in height. (C) The cochlear contains three canals: the vestibular canal, the middle canal, and the tympanic canal. (D) The three canals are separated by two membranes: the Reissner's membrane and the basilar membrane. (E) none of the above.

The base of the stapes couples vibrations into the cochlea via the oval window.

15. (**A**) The neural pulses from the left cochlear and the right cochlear are first converged at: (A) the superior olivary, (B) the inferior colliculus, (C) the medial geniculate nucleus, (D) the auditory cortex, (E) none of the above.

See handout: 06a – Auditory system - anatomy and physiology, page 3.

16. (**D**) Which of the following statements best describes inharmonicity? (A) The instrument is out of tune. (B) The intonation of the instruments is incorrect. (C) The overtones are in harmony. (D) The overtone frequencies depart from whole multiples of the fundamental frequency. (E) none of the above.

See handout: 14a – Inharmonicity, guitar acoustics.