

Answer all the questions below:



1) Unscramble the following words:

omectrgaelnetic

ronadiati

rseunive

gaamm

2) Make three sentences using the following nine words or phrases:

e.m. waves
UV light
radiation

transfer energy
exposure linked to
gamma and alpha

speed of light
skin cancer
beta

3) Match the word or phrase with the right meaning:

Microwaves



A collection of millions and millions of galaxies

Digital signal



Used in cooking and by mobile phones for communicating

Universe



A signal carrying information using a series of pulses

Answers:

1) Unscramble the following words:

electromagnetic

radiation

universe

gamma

2) Make three sentences using the following nine words or phrases:

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Physics 1B (PHY 1B)

complete the sentence

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Place the right word or words to complete the sentence:

 [Click mouse to reveal answer](#)

transmit

refracted

three

distant

galaxy

theory

quality

light

images

- All e.m. waves can be reflected, _____ or absorbed and travel at 300,000 km/s.
- Optic fibres can _____ information by carrying both infra red and visible light rays.
- The _____ of analogue signals decreases, even over relatively short distances.
- There are _____ types of radiation, alpha particles, beta particles and gamma rays.
- A _____ is a collection of millions of stars all rotating in four or five spiral arms.
- Optical telescopes produce _____ of the stars and nearby planets by using light.
- Astronomer Edwin Hubble first suggested that _____ from distant galaxies had a 'red shift.
- The 'big bang' _____ states that the Universe began with an immense explosion.
- Space telescopes like the Hubble are much better at producing images of _____ objects.

complete the sentence

Place the right word or words to complete the sentence:

transmit

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- a) All e.m. waves can be reflected, refracted or absorbed and travel at 300,000 km/s.
- b) Optic fibres can transmit information by carrying both infra red and visible light rays.
- c) The quality of analogue signals decreases, even over relatively short distances.
- d) There are three types of radiation, alpha particles, beta particles and gamma rays.
- e) A galaxy is a collection of millions of stars all rotating in four or five spiral arms.
- f) Optical telescopes produce images of the stars and nearby planets by using light.
- g) Astronomer Edwin Hubble first suggested that light from distant galaxies had a 'red shift.
- h) The 'big bang' theory states that the Universe began with an immense explosion.
- i) Space telescopes like the Hubble are much better at producing images of distance objects.

Physics 1B (PHY 1B)

multiple choice

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Click mouse to reveal answer

1: What type of waves does a toaster use to cook bread ?

- A Microwaves
 - B Light waves
 - C Infra red waves
 - D Ultra violet waves
-

2: Which of the following has the shortest wavelength ?

- A Gamma rays
 - B X-rays
 - C Light rays
 - D Radio waves
-

3: Which of the following waves is linked to causing skin cancer ?

- A Light waves
 - B Microwaves
 - C Radio waves
 - D Ultra violet waves
-

4: If you protect your skin with factor 10 sunscreen, what does this mean ?

- A Its safe to stay in the sun all day
 - B You receive 1/10th normal UV dose
 - C You will not sunburn
 - D You will bronze more easily
-

Physics 1B (PHY 1B)

multiple choice

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C **Infra red waves**

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D **Ultra violet waves**

4: If you protect your skin with factor 10 sunscreen, what does this mean ?

A

B **You receive 1/10th normal UV dose**

C

D



Click mouse to reveal answer

5: Which of the following statements about radiation is not true ?

- A There are three types of radiation
 - B Gamma radiation has no mass
 - C Alpha radiation is a helium nuclei
 - D Beta radiation is positively charged
-

6: Which of the following statements is correct for gamma radiation ?

- A It is a stream of electrons
 - B It is a stream of neutrons
 - C It is not deflected by an electric field
 - D It is a stream of protons
-

7: Radioactive isotopes can be used to date artefacts like material. This is ?

- A Uranium 235
 - B Carbon 12
 - C Carbon 14
 - D Carbon 13
-

8: Which radioactive isotope is used in smoke detector alarms ?

- A Uranium
 - B Radon
 - C Plutonium
 - D Americium oxide
-

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A

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A

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9: Exposure to UV light has been linked to skin cancer because ?

- A UV light damages the skin's fat layer
 - B UV light damages the skin's DNA
 - C UV light causes the skin to go brown
 - D UV light damages the cell membrane
-

10: Light from a galaxy with a 'red shift' would indicate what ?

- A It is moving towards Earth
 - B Distant and moving towards Earth
 - C Distant and moving away from Earth
 - D Close and moving away from Earth
-

11: Information from satellites is sent back to Earth using ?

- A X – rays
 - B Gamma rays
 - C Light rays
 - D Microwaves
-

12: What's the difference between a stable and radioactive isotope of the same element ?

- A Different number of electrons
 - B Same protons different neutrons
 - C Same neutrons different protons
 - D Same electrons different protons
-

multiple choice

9: Exposure to UV light has been linked to skin cancer because ?

A

B UV light damages the skin's DNA

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Physics 1B (PHY 1B)

true or false

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Decide whether the following statements are true or false:



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Statements:	True	False
1: All electromagnetic waves including radio and light waves transfer energy ?	True	False
2: The frequency of a wave is the number of waves produced each second ?	True	False
3: All e.m. waves can be reflected, refracted or absorbed and travel at 300,000 km/s ?	True	False
4: Microwaves are used by television or DVD player remote controls ?	True	False
5: UV radiation can cause skin aging or even cancer after prolonged exposure ?	True	False
6: X - Rays are useful because they can sterilise heat sensitive products like blood ?	True	False
7: Optic fibres can transmit information by carrying both infra red and visible light rays ?	True	False
8: The quality of analogue signals do not change, even when transmitted over long distances ?	True	False
9: Atoms consist of three sub atomic particles, protons, neutrons and electrons ?	True	False
10: There are three types of radiation, alpha particles, beta particles and gamma rays ?	True	False

Physics 1B (PHY 1B)

true or false

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Physics 1B (PHY 1B)

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Decide whether the following statements are true or false:



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1: A galaxy is a collection of millions of stars all rotating in four or five spiral arms ?	True	False
2: The milky way, our own galaxy is approximately 10 light years across ?	True	False
3: Optical telescopes produce images of the stars and nearby planets by using light ?	True	False
4: Radio telescopes produce information of distant stars and galaxies by using gamma rays ?	True	False
5: Astronomer Edwin Hubble first suggested that light from distant galaxies had a 'red shift' ?	True	False
6: The 'big bang' theory states that the Universe began with an immense explosion ?	True	False
7: Space telescopes like the Hubble are much better at producing images of distant objects ?	True	False
8: Our nearest star, other than our sun is called Alpha Centauri and is over 2 light years away ?	True	False
9: Light pollution in cities like London make it impossible to see all the detail of the milky way ?	True	False
10: One light year describes the total distance travelled by light in one calendar year ?	True	False

Physics 1B (PHY 1B)

true or false

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