**Origin of the elements Pre-test**

**Multiple Choice** *Identify the choice that best completes the statement or answers the question.*

1) What did God create on the 4th day?

|  |  |
| --- | --- |
| A) | light |
| B) | land and vegetation |
| C) | sun, moon, and stars |
| D) | sea creatures and birds |

2) How was the first element formed?

|  |  |
| --- | --- |
| A) | fusion |
| B) | fission |
| C) | decomposition of molecules |
| D) | chemical reactions |

3) Who came up with the Big Bang Theory?

|  |  |
| --- | --- |
| A) | Albert Einstein |
| B) | Fr Georges LaMaitre |
| C) | Edwin Hubble |
| D) | Stephen Hawking |

4) When did the universe come into existence?

|  |  |
| --- | --- |
| A) | about 4000 years ago |
| B) | about 1 million years ago |
| C) | about one billion years ago |
| D) | about 14 billion years ago |

5) When did protons form?

|  |  |
| --- | --- |
| A) | within the first second after the Big Bang |
| B) | after the first 3 minutes of the Big Bang |
| C) | 1000 years after the Big Bang |
| D) | 300,000 years after the Big Bang |

6) When did nuclear fusion first begin?

|  |  |
| --- | --- |
| A) | within the first second after the Big Bang |
| B) | after the first 3 minutes of the Big Bang |
| C) | 1000 years after the Big Bang |
| D) | 300,000 years after the Big Bang |

7) What were the first element/elements formed in the first 3 minutes of the Big Bang?

|  |  |
| --- | --- |
| A) | Hydrogen |
| B) | Deuterium |
| C) | Helium |
| D) | all three elements |

8) Which element is found in the highest amount in the universe?

|  |  |
| --- | --- |
| A) | Oxygen |
| B) | Nitrogen |
| C) | Hydrogen |
| D) | Helium |

9) What was the universe’s first molecule?

|  |  |
| --- | --- |
| A) | helium hydride molecule |
| B) | oxygen molecule |
| C) | water molecule |
| D) | hydrogen molecule |

10) Where were the lighter elements formed?

|  |  |
| --- | --- |
| A) | Big Bang |
| B) | large and small stars |
| C) | supernovas |
| D) | manmade |

11) Where were the heavier elements formed?

|  |  |
| --- | --- |
| A) | Big Bang |
| B) | large and small stars |
| C) | supernovas |
| D) | manmade |

12) How is spectrometry used in astronomy?

|  |  |
| --- | --- |
| A) | to determine composition |
| B) | to determine temperature |
| C) | to determine motion |
| D) | to determine composition, temperature, and motion |

13) What is the most abundant element in earth’s crust?

|  |  |
| --- | --- |
| A) | nitrogen |
| B) | oxygen |
| C) | iron |
| D) | silicon |

14) What is the most abundant element in the earth’s atmosphere?

|  |  |
| --- | --- |
| A) | nitrogen |
| B) | oxygen |
| C) | helium |
| D) | nitrogen |

**Origin of the elements Pre-test**

**Answer Section**

**MULTIPLE CHOICE**

1) C

2) A

3) B

4) D

5) A

6) B

7) D

8) C

9) A

10) B

11) C

12) D

13) B

14) A

**Origin of the elements Post-test**

**Multiple Choice** *Identify the choice that best completes the statement or answers the question.*

1) What did God create on the 4th day?

|  |  |
| --- | --- |
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| B) | sea creatures and birds |
| C) | land and vegetation |
| D) | light |

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| D) | Stephen Hawking |

4) When did the universe come into existence?

|  |  |
| --- | --- |
| A) | about 1 million years ago |
| B) | about 14 billion years ago |
| C) | about 4000 years ago |
| D) | about one billion years ago |

5) When did the protons form?

|  |  |
| --- | --- |
| A) | within the first second after the Big Bang |
| B) | 300,000 years after the Big Bang |
| C) | 1000 years after the Big Bang |
| D) | after the first 3 minutes of the Big Bang |

6) When does the nuclear fusion start?

|  |  |
| --- | --- |
| A) | within the first second after the Big Bang |
| B) | 300,000 years after the Big Bang |
| C) | 1000 years after the Big Bang |
| D) | after the first 3 minutes of the Big Bang |

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|  |  |
| --- | --- |
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| C) | Helium |
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|  |  |
| --- | --- |
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| B) | Nitrogen |
| C) | Oxygen |
| D) | Helium |

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|  |  |
| --- | --- |
| A) | water molecule |
| B) | hydrogen molecule |
| C) | helium hydride molecule |
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|  |  |
| --- | --- |
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| B) | large and small stars |
| C) | manmade |
| D) | supernovas |

11) Where did the heavier elements form?

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| --- | --- |
| A) | large and small stars |
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| C) | Big Bang |
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| --- | --- |
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| B) | to determine composition, temperature, and motion |
| C) | to determine composition |
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13) What is the most abundant element in earth’s crust?

|  |  |
| --- | --- |
| A) | silicon |
| B) | oxygen |
| C) | nitrogen |
| D) | iron |

14) What is the most abundant element in the earth’s atmosphere?

|  |  |
| --- | --- |
| A) | nitrogen |
| B) | nitrogen |
| C) | helium |
| D) | oxygen |

**Origin of the elements Post-test**

**Answer Section**

**MULTIPLE CHOICE**

1) A

2) D

3) B

4) B

5) A

6) D

7) D

8) A

9) C

10) B

11) B

12) B

13) B

14) B