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Ministry Of National Education

Oussama Ibn Zied Secondary School *(Skikda)*

Level: 3.A.S.*Technical Maths.* **Duration** : 2 hours.

Second Term Exam

Part I : ***Reading.*** ***(15 points)***

Read the text carefully then do the activities.

Black holes are one of the most mysterious and powerful forces in the universe. A black hole is where gravity has become so strong that nothing around it can escape, not even light. The mass of a black hole is so compact, or dense, that the force of gravity is too strong for even light to escape.

Black holes are truly invisible. We can't actually see black holes because they don't reflect light. Scientists know they exist by observing light and objects around black holes. Strange things happen around black holes to do with quantum physics and space time. This makes them a popular subject of science fiction stories even though they are very real.

Black holes are formed when giant stars explode at the end of their lifecycle. This explosion is called a supernova. If the star has enough mass, it will collapse on itself down to a very small size. Due to its small size and enormous mass, the gravity will be so strong it will absorb light and become a black hole. Black holes can grow incredibly huge as they continue to absorb light and mass around them. They can even absorb other stars. Many scientists think that there are super-massive black holes at the center of galaxies.

WWW.Education Site.

A. Comprehension:

(08Points)

1/-***Circle the choice that best completes statements.***

A. ***The text is:***	a. A report	b. An article.	c. A complaint.
B. ***It is taken form:***	a. Newspaper	b. Magazine	c. Web site.
C. ***The text is addressed to:***	a. Astronomers	b. Astrologists	c. The general reader.

2/- ***Are the following sentences True or False?***

a. Black holes are the most powerful forces in the universe.
b. The force which allows black holes to absorb light is gravity.
c. Black holes do not reflect the light.
d. Super nova is when an aging star exploded.

3/- ***Answer the following questions according to the text.***

a. How do scientists know that black holes exist?
B. What makes the gravity of a black hole strong?
c. Where do super massive black holes likely exist?

4/- ***Match the ideas with their paragraphs.***

- The formation of black holes.
- The definition of black holes.
- The observation of black holes.

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B. Text Exploration: *(07points)*

1/-***Find in the text words whose definitions follow.***

a. Every thing that exists in space.**§1**
b. The brightness that comes from the sun, fire electrical device etc…..**§2**
c. The amount of matter in any solid object or in any volume of liquid or gas.**§3**

2/- ***Complete the chart below.***

-Verb	*-Noun*	*-Adjective*
-……	-……	-Believable
-To advertise	-……	-……
-……	-Width	-……

3/- ***Ask questions that the underlined words answer.***

a. Mars is **34.65 million miles** from the earth.
b. This shirt is **a 44**.
c. Neil Armstrong set foot on the Moon **in 1969**.

4/- ***Classify the following words according to the pronunciation of the final sound /S/.***

-Mouths -Kisses -Flights -Trillions.

Part Two *Written Expression.* *(05 points)*

Choose only one topic.

Topic One: ***You bought an object from a super market (Jacket, Shirt,…..) but you discovered it was a counterfeit.*** Write a letter of complaint to the head of the department store.

Or

Topic Two: Write a composition ***to describe the planet Mercury.***

Use the following notes.

- Very small planet.
- Planet of solar system.
- Diameter: 4876 km/ orbits the sun 87.969 days.
- Looks like the moon /has craters and basins.
- No form of life / No water / No inhabitants.
- Presence of hydrogen and helium gases.

Teacher: Mr H.S

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