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| **Register Number:**  **Date:** |

**ST.JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27.**

**B.Sc. PHYSICS - IV SEMESTER**

**SEMESTER EXAMINATION: APRIL 2020**

**PHOE 4318 : WONDERS OF PHYSICS**

**Time: 1 1/2 hours Max Marks: 35**

This paper contains 2 printed pages and 3 parts

**PART A**

**Answer any 3 questions. Each question carries 5 marks. (3x5 = 15 marks)**

1. Explain Aristotle’s four causes.
2. Write a note on Earth - The privileged planet.
3. Mention few attributes of time.
4. Write briefly on the history of cosmology.
5. Is Information a non material entity? Explain the five levels of information.

**PART B**

**Answer any 10 questions. Each question carries 1 mark. (10x1 = 10 marks)**

1. Science comes from a Latin word scientia meaning \_\_\_\_\_\_\_\_
2. Wisdom b. understanding c. knowledge d. discernment
3. The material cause for the table is \_\_\_\_\_\_\_\_\_\_\_\_\_
4. Wood b. Carpenter c. the structure of table d. Axe
5. \_\_\_\_\_\_\_\_\_\_\_ Epicyclic model got embedded in the Roman Catholic Church for many centuries till Galileo.
6. Ptolemy’s b. Aristotle’s c. Pythagoras’ d. Plato’s
7. Sir William Hershel discovered island universe which are now called \_\_\_\_\_\_\_\_\_\_\_\_\_
8. Galaxies b. Supernova c. Nebulae d. Pulsar
9. The first reflecting telescope was made by \_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Sir Isaac Newton b. Galileo Galilee c. Sir William Hershel d. J.C. Maxwell
11. Which phenomenon led the understanding of what is the composition of stars?
12. Dispersion of light b. Quantum tunneling
13. Photoelectric effect d. Doppler effect
14. Which scientist at Mount Wilson’s Observatory discovered that the universe was expanding?
15. Max Planck b. Albert Einstein c. Edwin Hubble d. Neil Bohr
16. What is the end stage of a star very much massive than sun?
17. Supernova b. Black hole c. While dwarf d. Brown dwarf
18. The total number of stars in the observable universe is about \_\_\_\_\_

a. 100 billion

b. The same as the number of grains of sand on all the beaches on earth

c. The same as the number of grains of sand in a large 1 meter cube box

d. The same as the number of atoms that make up the earth

10. \_\_\_\_\_\_\_\_\_\_\_\_\_ are used to see through cold dense gasses and clouds in space.

a. infrared rays b. X rays c. Gamma rays d. UV rays

11. By reducing the amplitude of the sound wave, its:

a. pitch increases b. loudness decreases

c. loudness increases d. pitch decreases

12. Law of Cause and Effect can be stated as “every material effect must have an        \_\_\_\_\_\_\_\_\_\_\_\_\_\_ antecedent or simultaneous cause”.

a. Approximate b. Absolute c. Adequate d. Available

13. By how many seconds to mid night is the doomsday clock in the current year?

a. 80 seconds b. 100 seconds c. 150 seconds d. 60 seconds

14. An object whose gravitational field is so strong that light cannot escape is called

a. Dark matter b. neutron star c. Wormhole d. black hole

15. If you had something the size of a sugar cube that was made of neutron star matter, it        would weigh \_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. As much as the entire Earth b. As much as a truck

c. About 50 pounds d. As much as a large mountain.

**PART C**

**Compulsory Question: (1x 10 = 10 marks)**

Has Wonders of Physics course induced a sense of wonder in you? Explain in about 200-300 words.

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