****

|  |
| --- |
| **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. Write a note on size and distance of astronomical objects.
2. What are the different ways of arriving at knowledge
3. What is the trinity of science? Why is it called Trinities of trinity?
4. Explain how the concept of different levels information can be applied to time.
5. Write a note on any two experiments performed in the class by the students.

**PART B**

**Answer any 10 questions. Each question carries 1 mark. (1x10 = 10 marks)**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the process of reasoning in which the premise of an argument supports the conclusion, but do not guarantee it.
2. Deduction b. Induction c. Intuition d. Conjunction
3. The Universe cannot be self-caused. What argument best supports this claim
4. It cannot be tested scientifically b. It is not accurate by data
5. It is logically absurd d. It is self explanatory
6. Which Scientist who was also a priest proclaimed the heliocentric model before Galileo.
7. Columbus b. Martin Luther c. Copernicus d. Kepler
8. The telescope in our college is \_\_\_\_\_\_\_ inch \_\_\_\_\_\_\_\_\_\_ telescope
9. 6 , reflecting b. 8 , refracting c. 10, reflecting d. 8, reflecting
10. Which of the below options gives the ascending order of Star size
11. Betelgeuse, Sun, Canis Majoris, U V Scuti
12. Canis Majoris. U V scuti, Sun, Betelgeuse
13. Sun, Betelgeuse, Canis Majoris, U V Scuti
14. U V scuti, Canis Majoris, U V scuti, Sun
15. Which of the subtractive primaries given below when mixed give black color?
16. Red, blue green b. Red, blue, yellow

c. magenta, yellow, cyan d. magenta, red, green

7. Which region of electromagnetic spectrum was termed as “invisible light” when it was                     discovered in 1800

a. X rays b. infrared rays c. radio waves d. gamma rays

8. \_\_\_\_\_\_\_\_ waves cannot travel through vacuum

a. Mechanical waves b. non mechanical waves

c. Electromagnetic waves d. Gamma waves

9. A tuning fork of frequency 250 Hz will resonate with another tuning fork of                     frequency:

a. 128 Hz b. 250 Hz c. 384 Hz d. 512 Hz

10. Which level of information describes the meaning of the coded information?

a. Semantics b. Syntax c. Pragmatics d. Apobetics

11. Nobel Laureate Francis Crick is a proponent of which theory of life’s origin?

   a. Panspermia b. Biogenesis c. Abiogenesis         d. Spontaneous generation

12. Suppose you built a scale-model atom in which the nucleus is the size of a tennis                      ball. About how far would the cloud of electrons extend?

                   a. A few meters b. Several centimeters

                   c. To the moon d. Several Kilometers

13. 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.

              14. What is the logical explanation for the origin of information in DNA?

     a. Chance b. laws of physics c. intelligent mind d. matter

        15. 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

**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.