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Register Number:

DATE: 06-04-2017

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

UG – IV SEMESTER

SEMESTER EXAMINATION: APRIL 2017

PH OE 4116 : The Universe and Me

**Time- 1 ½ hrs Max Marks-35**

 This paper contains **1** printed page and **3** different parts.

**PART A**

 **Answer any 10 of the following. Each question carries 1 mark.** **(1x10=10)**

 1. A sun like star after death will become

a) Neutron star b) white dwarf c) black hole d) Brown dwarf

 2. The law that helped us to understand the expansion of the universe

 a) Newton’s gravitational law b) Einstein’s theory of relativity c) Quantum Theory d) Hubble’s Law

 3. The process that produces complex elements in space

 a) chemical reaction b) nuclear fission c) nucleosynthesis d) accretion of matter by compact stars

 4. The name of the galaxy we belong to is --------

 a) Andromeda b) solar system c) Large magellanic cloud d) Milky Way

 5. According to Geocentric universe

 a) Sun is the center of the universe b) Earth is the center of the universe c) none of the above

 6. Asteroids are heavenly bodies that are found in

 a) Kuiper belt b) between mars and Jupiter c) between Saturn and Jupiter d) beyond the solar system

 7. The radiation that comes from all directions in space is --------------

 a) radio wave b) microwave c) infra-red radiations d) gamma radiations

 8. Modern optical telescopes are mainly

 a) reflective b) refractive c) both reflective and refractive d) none of them

 9. The most energetic radiation in the electromagnetic spectrum is

 a) radio waves b) X-ray radiations c) Ultra violet radiations d) gamma radiations

 10. A celestial object is seen as red shifted .That means ----

 a) the object is approaching b) the object is moving away c) the object is at rest

 11. When the Sun becomes a red giant star

 a) it expands b) it contracts c) it undergoes explosion d) none of the above

 12. Black Hole got its name because

 a) nothing comes from it b) it looks like a black hole c) gravity is very strong d) none of the above

 **PART B**

**Answer any 5 of the following. Each question carries 4 marks. (5x4=20)**

 13. What do you understand by the term ‘one light year’? Convert it into meters.

 14. Calculate the light gathering power of a telescope whose diameter is 3m in comparison with a

 telescope of diameter 1cm.

 15. What is the principle of a reflecting telescope and mention the advantages.

 16. What happens to a massive star when it dies? Explain.

 17. A star’s life is a continuous battle against gravity. Comment.

 18. What is dark matter? Give proof for its existence.

 **PART C**

**Answer any 1 of the following. Each question carries 5 marks. (5x1=5)**

 19. Write a note on the evolution of stars.

 21. Explain how Hubble’s law supports the Big Bang theory.

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