

Reg. No. :

Code No. : 10347

Sub. Code : APPS 11/
CPPS 11

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Add on Major

PROFESSIONAL ENGLISH FOR PHYSICAL
SCIENCES — I

(For those who joined in July 2020-2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following are the applications of the Raman Effect?
 - (a) Medicine
 - (b) Fingerprint of the substance
 - (c) Chemistry
 - (d) All the above



2. In Raman Spectroscopy, the radiation lies in the _____.
- (a) Microwave region (b) Visible region
(c) UV region (d) X-ray region
3. Velocity of Sound in air
- (a) 330 m/s (b) 300 m/s
(c) 1130 m/s (d) 344 m/s
4. Our day to day reading is usually done in _____.
- (a) Intensively (b) Extensively
(c) Loudly (d) Silently
5. An instrument to measure temperature accurately is known as
- (a) Barometer (b) Monometer
(c) Baroscope (d) Thermometer
6. The National Science day is celebrated every year on which date?
- (a) February 28 (b) July 1
(c) March 8 (d) May 1
7. The major photochemical smog is _____.
- (a) Hydrogen peroxide
(b) Chlorofluorocarbon
(c) Peroxyacetyl nitrate
(d) All of the above

8. Current carrier in conductors is _____.
- (a) Electron (b) Proton
(c) Neutron (d) Positron
9. What is the inverse of resistance called?
- (a) Inductance (b) Conductance
(c) Resistivity (d) Permittivity
10. The study of celestial bodies and associated phenomenon is called _____.
- (a) Astronomy (b) Cosmology
(c) Astrology (d) Cosmetology

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Read the passage and answer the questions.

Raman and his research group in Calcutta set up some simple experiments to look at the scattering of light in various liquids. As a light source they initially used sunlight which was abundant in Calcutta. Using a colored filter they separated out blue-violet light,



which then scattered off the target liquid. They used yellow-green and other colored filters to visually detect a change in color of the scattered light. The effect is weak and difficult to see, so they soon realized they needed a more intense light source. The research center acquired a seven inch telescope, which Raman used to concentrate sunlight for their experiments. Even with the fairly simple setup, they were able to observe a shift in the color of light scattered by many different liquids.

In February 1928 Raman observed that the scattered light was polarized, which distinguished the new scattering effect from fluorescence. He and colleague K.S. Krishnan sent off a short paper to Nature titled "A New Type of Secondary Radiation", in which they reported having examined sixty different common liquids and observed the new scattering effect to some degree in all of them. Shortly afterwards Raman measured the exact wavelengths of the incident and scattered light using spectroscope and presented the quantitative results in a lecture to the South Indian Science Association in March and in the *Indian Journal of Physics*.

Questions :

- (i) Who discovered Raman Spectroscopy? (1)
- (ii) Why we see the sky is blue? (1)
- (iii) What is the real color of the Sky? (1)
- (iv) What is Raman Scattering? (2)

Or

(b) Match the following :

- (i) Crystal Dynamics – a frequency above the human ear's audibility limit
- (ii) Hypersonic – the vibrational movement of atoms in the solid state
- (iii) Ultrasonic – speed of more than 5 Mach
- (iv) Optics – concerned with the properties of sound
- (v) Acoustics – studies the behaviour properties of light

12. (a) List the steps to writing – Definitions with example.

Or

- (b) Write any five sentences of your choice on the use of Mobile Phones.



13. (a) Write extended definitions for the following terms :

- (i) Radiator (ii) Scientist
(iii) Robot (iv) Sensor.

Or

(b) Write a paragraph on an electronic gadgets that is very useful at home.

14. (a) Explain the terms :

- (i) Gravity
(ii) Relativity.

Or

(b) Write any five sentences about the significance of Newtons theory in Physics.

15. (a) Explain Pythagorean Theorem.

Or

(b) Choose the correct definition of these words and expressions in italics in the context they are used in the text.

- (i) useful in *erecting* proper beams to support _____.
- (1) put together and set upright
(2) stand straight
(3) create

(ii) this theorem *functions* as the basic principle _____.

- (1) celebrations
(2) acts or works
(3) a mathematical terminology

(iii) use its *altitude* and its distance _____.

- (1) a settled way of thinking or feeling about something
(2) height from the sea level
(3) time traveled.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Rearrange the given words in the proper order.

- (i) prevent / treat / and / medication / to / used / a / HCQ / is / Malaria
(ii) had / toxicities / compound / significant / the
(iii) additional / malaria / types / certain / of / requires / medication



(iv) bark / took / it / centuries / two / the / isolated / the for / from / bark / be / Quinine

(v) include / effects / common / adverse / other / itching / headache / and

Or

(b) On what principle does rocket science works? Describe the original rocket man.

17. (a) Outline the classification of Computer Graphics.

Or

(b) Write a paragraph on usage of mobile phones affect our health.

18. (a) Fill in the gaps with appropriate prepositions (By, for, of, in, to, through).

A light-emitting diode (LED) is a semiconductor light source that emits light when current flows _____ it. Electrons in the semi-conductor recombine with electron holes, releasing energy in the form _____ photons. The colour of the light (corresponding to the energy of the photons) is determined _____ the energy required for electrons _____ cross the band gap of the semiconductor. White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor

Page 8 Code No. : 10347

device appearing as practical electronic components in 1962, the earliest LEDs, emitted low-intensity infrared (IR) light. Infrared LEDs are used _____ remote-control circuits, such as those used with a wide variety of consumer electronics.

Or

(b) Unscramble the following words :

SL. NO. SCRAMBLED UNSCRAMBLED

(i) Ramanerdeetni

(ii) Oarcmlule

(iii) Ecuryfgen

(iv) Nucserclfeo

(v) Mmrocoichtnoa

(vi) Stenyinti

(vii) Rutpaere

(viii) Pcagpsrhoetr

(ix) Emureyr

(x) Ottecpsedohtro

19. (a) Write a Summary on the mystery of black holes.

Or

(b) Explain the Functionality of gravitational force with examples.

Page 9 Code No. : 10347



20. (a) Write an essay about Navigation System.

Or

(b) Explain the terms :

(i) Transmission

(ii) Deep Sea

(iii) Orbiters

(iv) Landers
