Home Assignment

Subject: Physics (Major)

B.Sc 6th Semester (Both Regular and Arrear)

Paper: 603

Read the Instructions carefully before submission

1. **The Assignment contains 20 numbers of Multiple Choice Questions (MCQs), each having one correct answer. Out of 20 you have to attempt only 11 numbers of questions.**
2. **Please take your time and read each question carefully, because once you submit it you can't modify the answers.**
3. **Students are directed to submit the assignment to the email id: feminabrahma1984@gmail.com mentioning their Name, Roll Code and Roll No., Registration No.**
4. **Last date of submission is 08/08/2020**

Total Marks = 11

1. What is the principle of fibre optical communication?
    a. Frequency modulation
    b. Population inversion
    c. Total internal reflection
    d. Doppler Effect
2. What is the other name for a maximum external incident angle?
    a. Optical angle
    b. Total internal reflection angle
    c. Refraction angle
    d. Wave guide acceptance angle
3. A single mode fibre has low intermodal dispersion than multimode.
    a. True
    b. False
4. Which of the following has more distortion?
    a. Single step-index fibre
    b. Graded index fibre
    c. Multimode step-index fibre
    d. Glass fibre
5. In which of the following there is no distortion?
    a. Graded index fibre
    b. Multimode step-index fibre

    c. Single step-index fibre

    d. Glass fibre

6. Which of the following loss occurs inside the fibre?

    a. Radiative loss

    b. Scattering

    c. Absorption

    d. Attenuation

7. When more than one mode is propagating, how is it dispersed?

    a. Dispersion

    b. Inter-modal dispersion

    c. Material dispersion

    d. Waveguide dispersion

8. Calculate the numerical aperture of an optical fibre whose core and cladding are made of materials of refractive index 1.6 and 1.5 respectively.

    a. 0.55677

    b. 55.77

    c. 0.2458

    d. 0.647852

9. The LCD digital display that is based on

    a. Radiation of light

    b. Reflection of light

    c. Emission of light

    d. Transmission of light

10. The typical value of thickness of liquid layer of LCD's is ...... mm

    a. 0.22

    b. 2.2

    c. 0.025

    d. 0.035

11. Which of the following liquid crystal layers are used in LCD's

    a. Heavy water

    b. Nematic

    c. Hydrosulphuric acid

    d. Hydrochloric acid

12. Which of the following consumes less power?

    a. Incandescent lamp

    b. LCD

    c. Fluorescent tube

    d. LED

13. what is the ratio of the focal lengths of the two Plano-convex lenses in Huygens's Eyepiece?

    a. 2:1

    b. 3:1

    c. 3:2

    d. 4:3

14. In which of the following instruments, the objective has a large focal length and a very large eyepiece?

    a. A simple microscope

    b. A Compound microscope

    c. Telescope

    d. Interferometer

15. Huygens's eyepiece is also known as _____

    a. Spherical Eyepiece

    b. Positive Eyepiece

    c. Negative Eyepiece

    d. Double Eyepiece

16. The component in an optical instrument used to increase the angular object field and to minimize aberrations is called as _____

    a. Objective lens

    b. Eye lens

    c. Field Lens

    d. Plano-concave lens

17. In Babinets compensator, the compensator compensates

    a. Path difference

    b. Phase difference

    c. Wavelength

    d. Both a) and b)

18. Grating element is

    a. (e+d)

    b. (e-d)

    c. (e=d)

    d. (e=0)

19. Which prism has more advantage

    a. Wallaston prism

    b. Rochon prism

20. Draw a block diagram of optical fibre in communication system.

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