Home Assignment

Subject: Physics (Major)

B.Sc 2nd Semester Old Course (Arrear)

Paper: 201

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 by any one of the following methods**

(i) **Copy the link and past in the browser to get the assignment** https://docs.google.com/forms/d/e/1FAIpQLSdehUzty8W5N55pT2JRoAQlar6_LJUzXfrBPNm67PUvkBxpCw/viewform?usp=pp_url

(ii) **Send the scan copy of the assignment to the email id: bikashdey2012@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. The Curvilinear co-ordinates are denoted by
   a. (u, v, w)
   b. (x, y, x)
   c. (a, b, c)
   d. (p, q, r)
2. The scale factors are denoted by
   a. (x_1, x_2, x_3)
   b. (h_1, h_2, h_3)
   c. (ρ_1, ρ_2, ρ_3)
   d. None
3. In cylindrical co-ordinates, scale factors are
   a. $(0, \rho, 1)$
   b. $(1,1,\rho)$
   c. $(1,\rho, 1)$
   d. $(\rho, 1,1)$
4. In spherical polar co-ordinates (x, y, z) are
   a. $(r \sin\theta \cos\theta\,, r \sin\theta \sin\emptyset\,, r \cos\theta)$

b. $(r\sin\theta\cos\theta, r\sin\theta\sin\emptyset, r\cos\emptyset)$
c. $(r\sin\emptyset\cos\theta, r\sin\theta\sin\emptyset, r\cos\emptyset)$
d. None of these

5. The scale factors in spherical polar co-ordinates are
   a. $(\sin\theta, r, 1)$
   b. $(1, r, \sin\theta)$
   c. $(r, 1, \sin\theta)$
   d. None
6. The value of the integration $\int_{-\infty}^{+\infty} x\delta(x-a)dx$ is
   a. 1
   b. a
   c. 0
   d. None of these
7. The value of the integration $\int_{-\infty}^{+\infty} 4x\delta(x-2)dx$ is
   a. 0
   b. 4
   c. 4x
   d. 8
8. The value of $\Gamma(1)$ is
   a. 0
   b. 1
   c. 2
   d. None of the above
9. The value of $\Gamma\left(\frac{1}{2}\right)$ is
   a. 0
   b. $\sqrt{2\pi}$
   c. $3\sqrt{\pi}$
   d. $\sqrt{\pi}$
10. Which of the following is not correct?
    a. $x\delta(x) = 0$
    b. $\delta(-x) = \delta(x)$
    c. $\int_{-\infty}^{+\infty} x\delta(x-2)dx = 0$
    d. $\delta'(-x) = -\delta'(x)$
11. What is the property of a liquid due to which its free surface tries to have minimum surface area?
    a. Viscosity
    b. Buoyancy
    c. Surface tension

d. Rigidity

12. Why a small liquid drop is in spherical shape?
    a. Due to Surface tension
    b. Due to Viscosity
    c. Due to hydrogen bonding
    d. Due to low density
13. What is the shape of meniscus when angle of contact is greater than 90°?
    a. Concave
    b. Convex
    c. Plane
    d. None of these
14. The modulus of elasticity is dimensionally equivalent to
    a. Strain
    b. Stress
    c. Surface tension
    d. Poisson's ratio
15. The property by which a body returns to its original shape after removal of the force is called
    a. Plasticity
    b. Elasticity
    c. Ductility
    d. Malleability
16. Which law is also called as the elasticity law?
    a. Bernoulli's law
    b. Stress law
    c. Hooke's law
    d. Poisson's law
17. The viscous force the relative motion between the adjacent layers of a fluid in motion. Which one of the flowing fits best in the sentence?
    a. Opposes
    b. Never affects
    c. Facilitates
    d. may effect under certain conditions
18. The viscosity of a fluid in motion is 1 Poise. What will be it's viscosity (in Poise) when the fluid is at rest?
    a. 0
    b. 0.5
    c. 1
    d. 2

19. Which one of the following is the CGS unit of dynamic viscosity?
    a. Stokes
    b. Pa-s
    c. m^2/s
    d. Poise
20. Which of these fluids has the highest viscosity?
    a. Water
    b. Honey
    c. Blood
    d. air

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