

E-JUST Entrance Exam model

**Faculty of Engineering, Computer Science and Information Technology,
(Art & Design) (sustainability Architecture)**

Subject: Physics

Time: 20 minutes

Marks: 20 Marks

Student Name:.....

Application ID No:.....

Undergraduate Entrance Examination Instructions

- 1. Examinees will be provided with question booklet and answer sheet.**
- 2. Questions are on both the front and back of the page.**
- 3. Question booklet contains scratch papers for use in solving exams.**
- 4. Answer ALL questions to the best of your abilities. Be sure to write legibly and choose your answers clearly using HB or B pencil, not pen.**
- 5. Question booklet will be collected back.**

Choose the correct answer for the following questions: (1 Mark for each question)

1. A car moves with constant velocity. The net force acting on it is:
A) Increasing
B) Decreasing
C) **Zero**
D) Large
2. The SI unit of acceleration is:
A) m/s
B) **m/s²**
C) N
D) J
3. Centripetal force in circular motion acts:
A) **Toward the center**
B) Away from center
C) Along tangent
D) Upward
4. Pressure depends on:
A) Area only
B) **Force and area**
C) Volume
D) Density only
5. A 5 kg body under 20 N force accelerates at:
A) **4 m/s²**
B) 5 m/s²
C) 2 m/s²
D) 10 m/s²
6. Heat transfer through direct contact of particles is called:
A) Convection
B) Radiation
C) **Conduction**
D) Expansion
7. The SI unit of specific heat capacity is:
A) J
B) W
C) **J/kg·°C**
D) N/kg

8. If the mass of a substance doubles, the heat required to raise its temperature by 1°C will:
- A) Stay the same
 - B) **Double**
 - C) Halve
 - D) Become zero
9. If temperature of a gas increases at constant pressure, its volume:
- A) Decreases
 - B) **Increases**
 - C) Remains constant
 - D) Becomes zero
10. Specific heat capacity depends on:
- A) Mass only
 - B) Temperature only
 - C) **Type of material**
 - D) Shape
11. The angle of reflection is always equal to:
- A) Angle of refraction
 - B) **Angle of incidence**
 - C) 90°
 - D) Critical angle
12. Refraction occurs because light changes its:
- A) Color
 - B) Frequency
 - C) **Speed**
 - D) Energy
13. A concave mirror can produce:
- A) Only virtual images
 - B) Only upright images
 - C) Only diminished images
 - D) **Real and virtual images**
14. When light enters a denser medium, its wavelength:
- A) Increases
 - B) **Decreases**
 - C) Remains constant
 - D) Becomes zero
15. Two resistors $5\ \Omega$ and $5\ \Omega$ connected in series have total resistance:
- A) **$10\ \Omega$**
 - B) $5\ \Omega$
 - C) $2.5\ \Omega$
 - D) $25\ \Omega$

16. In a parallel circuit, the voltage across each branch is:
- A) Different
 - B) Zero
 - C) Divided equally
 - D) **The same**
17. A 12 V battery supplies 2 A. The power delivered is:
- A) 12 W
 - B) 20 W
 - C) **24 W**
 - D) 36 W
18. If resistance doubles and voltage remains constant, current:
- A) Doubles
 - B) **Halves**
 - C) Stays same
 - D) Becomes zero
19. A transformer works on the principle of:
- A) Electrostatics
 - B) Resistance heating
 - C) **Electromagnetic induction**
 - D) Conduction
20. A generator converts:
- A) Electrical energy to heat
 - B) Magnetic energy to heat
 - C) **Mechanical energy to electrical energy**
 - D) Chemical energy to light