1Skills for physics

1.1 Physical quantities

1.2 SI units

1.4 Scalars and vectors

2.1 Measurements

2.2 Errors and uncertainties
2

Motion

3.1 Equations of motion

\[ v = u + at \]
\[ s = ut + \frac{1}{2}at^2 \]
\[ v^2 = u^2 + 2as \]

4.1 Momentum and Newton’s laws of motion

\[ F = ma \]
\[ p = mv \]

4.2 Non-uniform motion

4.3 Linear momentum and its conservation

5.1 Types of force

\[ F = mg \]
\[ F = Eq \]

17.1 Concept of an electric field

17.2 Uniform electric fields

\[ E = \frac{\Delta V}{\Delta d} \]
\[ F = \frac{QV}{d} \]

Key:

KC 1
KC 2
KC 3
KC 4
KC 5
Waves

14.1 Progressive waves

14.2 Transverse and longitudinal waves

14.3 Determination of frequency and wavelength of sound waves

14.4 Doppler effect

14.5 Electromagnetic spectrum

14.6 Interference, two-source interference

15.1 Stationary waves

15.2 Diffraction

15.3 Diffraction gratings

Key: KC1 KC2 KC3 KC4 KC5

Copyright © UCLES 2018

Online Classes: Megalecture@gmail.com
www.youtube.com/megalecture
www.megalecture.com
Electrical circuits

20.1 Practical circuits

19.1 Electric current

19.3 Resistance and resistivity

20.2 Kirchhoff’s laws

20.3 Potential dividers
6 Particle physics

26.1 Atoms, nuclei and radiation

26.2 Fundamental particles
7 Further mechanics

7.1 Kinematics of uniform circular motion

7.2 Centripetal acceleration and centripetal force

13.1 Simple harmonic oscillations

13.2 Energy in simple harmonic motion

13.3 Damped and forced oscillations, resonance

14.6 Production and use of ultrasound in diagnosis

8.1 Gravitational field

8.2 Gravitational force between point masses

8.3 Gravitational field of a point mass

8.4 Gravitational potential

Copyright © UCLES 2018

Key: KC1 KC2 KC3 KC4 KC5

Online Classes : Megalecture@gmail.com
www.youtube.com/megalecture
www.megalecture.com
Thermodynamics

11.1 Thermal equilibrium

11.2 Temperature scales

11.3 Practical thermometer

12.1 Specific heat capacity and specific latent heat

12.2 Internal energy and the first law of thermodynamics

10.1 Equation of state

10.2 Kinetic theory of gases

10.3 Kinetic energy of a molecule

### Key:
- K1
- K2
- K3
- K4
- K5

### Copyright © UCLES 2018

### Online Classes:
- Megalecture@gmail.com
- www.youtube.com/megalecture
- www.megalecture.com
10 Electromagnetism

22.1 Concept of a magnetic field

Fleming’s left hand rule

22.3 Force on a moving charge

22.4 Magnetic fields due to currents

22.5 Nuclear magnetic resonance imaging

21.1 Measurements

24.1 Characteristics of alternating currents

24.2 The transformer

24.3 Transmission of electrical energy

24.4 Rectification

Copyright © UCLES 2018

Key:

Key: KC1 KC2 KC3 KC4 KC5

Copyright © UCLES 2018
Quantum physics

25.1 Energy of a photon

25.2 Photoelectric emission of electrons

25.3 Wave-particle duality

25.4 Energy levels in atoms and line spectra

25.5 Band theory

25.6 Production and use of X-rays

Key:

Copyright © UCLES 2018

Online Classes : Megalecture@gmail.com
www.youtube.com/megalecture
www.megalecture.com
Nuclear physics

26.3 Mass defect and nuclear binding energy

\[ ^{14}_7\text{N} + ^{4}_2\text{He} \rightarrow ^{17}_8\text{O} + ^{1}_1\text{H} \]

nuclear equations

Radioactive decay

\[ \lambda = \frac{0.693}{t_{1/2}} \]

\[ A = \lambda N \]

26.4 Radioactive decay

Key:

KC1
KC2
KC3
KC4
KC5

Copyright © UCLES 2018

Online Classes: Megalecture@gmail.com
www.youtube.com/megalecture
www.megalecture.com