



Jawapan Praktis Pengukuhan

Bab 1

1.1 Sistem Saraf Manusia

Human Nervous System

1. otak, saraf tunjang dan saraf periferi
the brain, the spinal cord and the peripheral nerves
2. tubuh badan
body
3. tindakan terkawal, tindakan luar kawal
voluntary action, involuntary action
4. isyarat elektrik
an electrical signal

1.2 Rangsangan dan Gerak Balas dalam Manusia

Stimuli and Response in Human

1. reseptor
receptors
2. Mata
Eyes
3. bunyi
sound
4. gelombang
waves
5. bahan kimia
chemicals
6. sentuhan, haba, sejuk, tekanan, sakit
touch, heat, cold, pressure, pain
7. bilangan reseptor, ketebalan epidermis
the number of receptors, the thickness of epidermis
8. manis, masin, masam, pahit, umami
sweet, salty, sour, bitter, umami.

1.3 Rangsangan dan Gerak Balas dalam Tumbuhan

Stimuli and Response in Plants

1. Geotropisme
Geotropism
2. Fototropisme
Phototropism
3. Hidrotropisme
Hydrotropism
4. Tigmotropisme
Thigmotropism

1.4 Kepentingan Gerak Balas terhadap Rangsangan dalam Haiwan Lain

The Importance of Response towards Stimuli in Other Animals

1. penglihatan stereoskopik, penglihatan monokular
stereoscopic vision, monocular vision
2. stereofonik
stereophonic
3. julat frekuensi
frequency range
4. garis lateral
lateral lines



2.1 Sistem Respirasi *Respiratory System*

1. bronkiol
bronchiole
2. Bronkus
Bronchus
3. (a) (i) mengecut
contracts
(ii) atas
upwards
(iii) bertambah
increases
(b) (i) mengendur
relaxes
(ii) bawah
downwards
(iii) berkurang
decreases
4. lebih tinggi
higher
5. lebih rendah
lower

2.2 Pergerakan dan Pertukaran Gas dalam Badan Manusia *Movement and Exchange of Gas in the Human Body*

1. sel darah merah
red blood cells
2. jantung
heart
3. karbon dioksida
carbon dioxide
4. (a) lembap
moist
(b) besar
large
(c) banyak
Abundance

2.3 Kesihatan Sistem Respirasi Manusia *The Health of Human Respiratory System*

- (a) Tar
Tar
- (b) Karbon monoksida
Carbon monoxide
- (c) Nikotin
Nicotine
- (d) Karsinogen
Carcinogen

2.4 Adaptasi dalam Sistem Respirasi *Adaptation in Respiratory System*

1. paru-paru, kulit lembap
the lungs, moist skin
2. insang
the gills
3. sistem trakea
the tracheal system
4. tinggi
high

2.5 Pertukaran Gas dalam Tumbuhan

Exchange of Gas in Plants

1. oksigen, karbon dioksida
oxygen, carbon dioxide
2. stoma
the stoma
3. sel pengawal
guard cells
4. osmosis
the osmosis
5. menurun
decrease



3.1 Sistem Pengangkutan dalam Organisma *Transport System in Organisms*

1. resapan
diffusion
2. kompleks
Complex
3. (a) sel-sel badan
the body cells
(b) karbon dioksida
carbon dioxide

3.2 Sistem Peredaran Darah *Transport System in Humans*

1. (a) kecil
small
(b) besar
Large
(c) tebal
Thick
2. sistem peredaran pulmonari, sistem peredaran sistemik
pulmonary circulation system, systemic circulation system

3.3 Darah Manusia *The Human Blood*

1. sel darah
blood cells
2. sel darah merah
red blood cells
3. AB
AB
4. penderma universal, penerima universal
universal donor, universal recipient

3.4 Pengangkutan dalam Tumbuhan *Transport in Plants*

1. stoma
the stomata
2. keamatan cahaya
light intensity
3. berkas vaskular
vascular bundle

3.5 Sistem Peredaran Darah dan Pengangkutan dalam Tumbuhan *Blood Circulatory System and Transport in Plants*

- (a) air
water
- (b) darah
blood
- (c) floem
phloem
- (d) transpirasi
transpiration



4.1 Kepelbagaian Mineral

Various Minerals

1. semula jadi
naturally
2. unsur, sebatian
elements, compound
3. air
water
4. tidak mengurai
do not decompose
5. larut
soluble
6. sulfur dioksida, oksida
sulphur dioxide, oxide
7. sangat larut
very soluble
8. larut sedikit
slightly soluble
9. merkuri, argentum
mercury, silver
10. sebatian silikon
silicon compound

4.2 Siri Kereaktifan Logam

The Reactivity Series of Metals

1. oksigen
oxygen
2. Oksida logam
Metal oxide
3. zink, ferum, plumbum
zinc, iron, lead

4.3 Pengekstrakan Logam daripada Bijihnya

Extraction of Metals from their Ores

1. sebatian
compounds
2. bijih
ores
3. pengekstrakan logam
metal extraction
4. elektrolisis
electrolysis
5. karbon
carbon
6. relau bagas, Malaysia
blast furnace, Malaysia
7. negatif
negatively



5.1 Tindak Balas Endotermik dan Eksotermik

Endothermic dan Exothermic Reactions

1. tindak balas endotermik
endothermic reactions
2. tindak balas eksotermik
exothermic reaction
3. (a) haba
heat
(b) diserap
absorbed
(c) dibebaskan
released
(d) berkurang
decreases
(e) bertambah
increases
(f) Pemutusan
Breaking down
(g) Pembentukan
Formation



6.1 Penjanaan Tenaga Elektrik *Generation of Electrical Energy*

1. Sumber tenaga boleh baharu
Renewable source of energy
2. Sumber tenaga tidak boleh baharu
Non-renewable source of energy
3. penjana elektrik hidro
hydroelectric generator

6.2 Transformer *Transformers*

1. Transformer
Transformer
2. penghantaran, pengagihan
transmission, distribution
3. gegelung primer, gegelung sekunder
the primary coil, the secondary coil
4. transformer injak naik, transformer injak turun
step-up transformer, step-down transformer

6.3 Penghantaran dan Pengagihan Tenaga Elektrik *Electricity Transmission and Distribution*

1. arus ulang-alik
an alternating current
2. injak naik
step-up
3. Rangkaian Grid Nasional
The National Grid Network
4. elektrik
electrical
5. Pencawang
The substations
6. suis utama
main switch
7. (a) Fius
Fuse
(b) Wayar hidup
Live wire
(c) Wayar bumi
Earth wire
(d) Wayar neutral
Neutral wire

6.4 Kos Penggunaan Tenaga Elektrik *The Costs of Electrical Energy Usage*

1. Meter rumah
The household meter
2. bahan api fosil
fossil fuels



Jawapan Praktis Pengukuhan

Bab 7

7.1 Kerja, Tenaga dan Kuasa

Work, Energy and Power

1. Kerja
Work
2. Sesaran (m)
Displacement (m)
3. sama
equal
4. Kuasa
Power
5. Masa (s)
Time (s)

7.2 Tenaga Keupayaan dan Tenaga Kinetik

Potential Energy and Kinetic Energy

1. Tenaga keupayaan
Potential energy
2. (a) Tenaga keupayaan graviti
Gravitational potential energy
(b) Tenaga keupayaan kenyal
Elastic potential energy
3. Tenaga kinetik
Kinetic energy
4. halaju²
velocity²

7.3 Prinsip Keabadian Tenaga

Principle of Conservation of Energy

1. (a) dicipta
created
(b) dipindahkan
transferred
(c) sama
the same
2. meningkat, berkurang, bertambah
Increases, decreases, increases



8.1 Sejarah Penemuan Keradioaktifan *History of Radioactivity Discovery*

1. (a) Wilhelm Conrad Rontgen
(b) Antoine Henri Becquerel
(c) Marie Curie
(d) Pierre Curie
(e) Ernest Rutherford
2. nukleus
nucleus
3. radioaktif, kebuk awan
radioactive, cloud chamber
4. pereputan, Becquerel (Bq)
decomposition, Becquerel (Bq)
5. Separuh hayat
Half-life

8.2 Atom dan Nukleus *Atom and Nucleus*

1. neutron
neutron
2. neutral
neutral
3. elektron elektron
electrons, electrons

8.3 Sinaran Mengion dan Sinaran Tidak Mengion *Ionising and Non-ionising Radiation*

1. sinaran radioaktif
radioactive radiation
2. sumber semula jadi, sumber buatan manusia
natural sources, man-made sources
3. dosimeter
dosimeter
4. Sinaran tidak mengion
The non-ionising radiation

8.4 Kegunaan Sinaran Radioaktif *Uses of Radioactive Radiation*

1. beta
Beta
2. radioaktif
Radioactive
3. Karbon-14
Carbon-14
4. Sinar gama
Gamma rays



9.1 Aktiviti Matahari yang Memberi Kesan kepada Bumi *The Sun's Activities that Effect the Earth*

1. (a) Korona
Corona
(b) Kromosfera
Chromosphere
(c) Fotosfera
Photosphere
(d) Teras
Core
2. (a) Tompok matahari
Sunspots
(b) Semarak suria
Prominence
(c) Nyalaan suria
Solar flare
(d) Angin suria
Solar wind
3. magnetosfera
magnetosphere
4. angin suria, sinaran kosmik
solar wind, cosmic rays
5. aurora
aurora

9.2 Cuaca Angkasa *Space Weather*

1. Cuaca angkasa, Matahari
Space weather, the Sun
2. (a) satelit
satellite
(b) grid
grid
(c) radiasi
radiation
3. Aurora
Aurora



10.1 Perkembangan dalam Astronomi

The Development in Astronomy

1. Ptolemy
2. Nicolaus Copernicus
3. Johannes Kepler

10.2 Perkembangan dan Teknologi dalam Penerokaan Angkasa Lepas

The Development and Technology in Space Exploration

1. Sputnik 1
2. (a) Yuri Gagarin
(b) Neil Armstrong
3. (a) Satelit komunikasi
Communication satellite
(b) Satelit cuaca
Weather satellite
(c) Satelit navigasi
Navigation satellite
(d) Satelit ketenteraan
Military satellite
4. penderiaan jauh
Remote sensing