SUPPORT AND MOVEMENT IN PLANTS AND ANIMALS MARKING SCHEME

1. 1989 Q6 P1

(a) **K:** Facet for articulation
L: Transverse process- for attachment of muscles.

(b) Cervical or neck region

2 1991 Q1 P1

Skeletal muscles have actin and myosin Sadiomeres/ contractile proteins: which facilitate contraction and relaxation; a high density of mitochondrion provide energy for contraction; elongated fibres to allow change in length.Acc. Atomycin, actin and myosin Re: Haemoglobin because it's found in blood.

3 1991 Q5 P1

(a) Olecranon process

(b) Biceps (flexor muscles) relax triceps (extensor muscles) contract.

4. 1997 Q7 P1

Biceps	Gut Muscles
Striated	Unstriated
Multinucleated	Uninucleated
Long Fibres	Short fibres
Cylindrical	Spindle Shaped

5. 1998 Q7 P1

(a) Femur
Ball and socket

6. 1998 Q9 P1

Turgidity
Presence of collenchymas (in the cortex)

7. 1999 Q6 P1

Ability to pollinate
Response to (tactic, nastic, tropics) Stimuli
Ability to exploit localized nutrients/ability to photosynthesize
Ability to disperse seeds/fruits-propagation

8. 2000 Q6 P1

Attachments of powerful back muscles that maintain posture flex the vertical column/ support viscera/ abdominal organs

9. 2002 Q8 P1

a) Ball and socket
b) Hinge

10. 2002 Q20 P1

(a) **Hydrostatic**

- Exoskeleton
- Endoskeleton

(b) **Cervical vertabrae**

Vertebraterial canals for passage of (vertebral) artery; atlas has (broad) surfaces for articulation with condylyses of skulls to permit nodding

- Axis has adenoid process/ protein Centrum to permit rotary/ turning act as a pivot for atlas/ skull/ movement of atlas/ Branched / forked/ short/ broad transverse processes, for attachment of (neck) muscles; ace zygopophysis, for articulation between vertebrae (acc. Vertebraterical canals and zygopophogen if shown on a diagram of the vertebrae

- Has a short reduce neural spine, for attachment of (neck) muscles, has wide / larger neural canal; for passage of spinal cord/ alternatively has wide neural for protection of spinal cord.

Lumbar

- Broad/ long/ neural spine for attachment of (powerful back) muscles long/ large/ well development/ transport processes for attachment of muscles (that maintain posture and flex the muscles)
- Has metamorphosis and hypothesis for muscle attachment large/ thick centrums for support
- Prezygapophysis/ post/ zygapophysis for articulation between vertebrae (acc. Anapophysis for hypopyses)

Sacral Vertebrae

- Anterior vertebrae has a well developed transverse process, which are fused to the pelvis girdle/ articulate with pelvic girdle
- Vertebrae fused, for strength transmit weight of the stationary animal to the rest of the body.
- Sacrum has a broad base/ short neural spine; for attachment of (back)

11. 2003 Q5 P1

a) Ulna

b) radius;
Humerus;

12. 2004 Q1 P1

a) Intervertebral disc.

b) -Act as a cushion / absorbs shock;
- Reduce frictions; flexibility of the vertebral column. Rej. prevent avoid.

13. 2004 Q10 P1

Thickened walls/ lignified accept lignin

14. 2006 Q3 P1

(a) Scherenchyma; Xylem vessels/ xylem tracheids/ xylem tracheids rej. Sclereids

(b) Cell take in water and became turgid; (OWTTE)

15. 2006 Q20 P1

(a) Thigmotropism/ Haptotropism; rej. Haptotrophism/ thigmotrophism

(b) Exposes leaves/ shoots for maximum/ a lot of absorption for sunlight for photosynthesis;

- Enable roots of plants to seek/search water; rej mineral salts/ ions alone.
- Enables plants stems to obtain mechanical support especially those that Lack woody stems
- Enables roots to grow deep in soil from anchorage
- Enable pollen tube to grow towards embryo sac to facilitate fertilization

16. 2006 Q1 P2

(a) X- Femur
Y- Tibia
Z- Fibula

(b) (i) Synovial fluid
(ii) Lubrication of the joint/ shock absorption
Distribution of pressure

(c) Ligament

(a) Ball and socket joint allows movement in all planes while the illustrated allows movement in one plane only. Accept 360^0 for all planes 180^0 for one plane.

(b) Olecranon process.

17. 2007 Q24 P1

(a) Have short neural spines

(b) – Xylem tissues

- Collenchyma tissues
- Sclerenchyma tissues
- Parenchyma tissues

18. 2007 Q4 P2

Type of muscle	Where found
(i) skeletal	Attached bones and skeleton
(ii) Smooth	Walls of tabular structures
(iii) Cardiac	Heart muscles

(b) Ball and socket joint- allow movement in all directions i.e 360^0
Hinge joint – Allow movement only on one plane i.e 180^0

(c) It's a slippery fluid that lubricates the joints reducing friction during movement

(d) Prevents drying out of organism
Controls size of the organism
- Provides protection against microbial infections and mechanical injury

19. 2008 Q19 P1

(a) Cardiac muscle
(b) Contraction of the heart

20. 2008 Q22 P1

Large airspace
Thin cell walls

21. 2008 Q4 P1

(a) Pelvic girdle
(b) (i) Femur
(ii) Obturatar foramen.

22. 2008 Q4 P2

(a) **(i) Plants**
Expose the surface area of leaf to sun light for photosynthesis
Ensure flowers are exposed to pollution
Expose fruits seeds to disperse
To resist breakage (due to their own weight and that of the organism)

(ii) Animals
Attachment of other body organs
To protect delicate organs
Maintain body shape/ form
Enable movement/ locomotion
Attachment of muscles

(b) Enable animals to search for funds
Enable animals to search for shelter
Enable animals to search for water
Enables animals to search for breeding
Enables animals to escape predator/ harmful conditions

23. 2009 Q12 P1

(a) Scapula; *Acc. Scapul*

(b) (i) Humerus; *Acc: Humerous but Rej: Humourous*

Ref: ball/socket, Rej. Socket and ball joing

(ii) Ball and socket joint;

c) Attachment of muscles

24. 2009 Q14 P1

Parenchyma / collenchymas

25. 2009 Q5 P2

(a) Root hairs / roots absorb water by osmosis; cells of the plant become turgid; leaves become firm/spread out plant become firm / upright

(b) (i) Collenchyma

(ii) Xylem / tracheid / vessels / schlerenchyma

(c) - Steering
- Balancing
- Braking, changing direction
- Prevent fish from pitching / up and down movement

26. 2010 Q26 P1

(a) Provide support

Enables plants to grow forward light

(b) In search of nutrients

Anchorage

27. 2012 Q4 P2

(a) (i) **K**- Ulna

L- Humerus

(ii) Movement of lower arm upwards takes place at the elbow,olecranon process which is between the ulna and the humerus;biceps/flexor muscles contract;while the triceps/extensor muscles relax; bringing about the movement of lower arm upwards.

(b) The rigid midrib holds leaf (out away)from the stem;

Profuse network of veins have lignified xylem(cells which support leaf to stay spread out)

Turgidity in spongy mesophyll/palisade cells (support the leaf to remain open)