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 மாகாணக் கல்வித் திணைக்களம் - வட மத்திய மாகாணம்
 DEPARTMENT OF EDUCATION - NORTH CENTRAL PROVINCE



දේශීය

10

Second term test - 2016

Science II -Answers

පාසලේ නම :

ශිෂ්‍ය / ශිෂ්‍යාවගේ නම / ඇතුළත්වීමේ අංකය :

කාලය : පැය 3 යි.

Part I

- | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 01 - 03 | 06 - 04 | 11 - 04 | 16 - 01 | 21 - 03 | 26 - 02 | 31 - 04 | 36 - 03 |
| 02 - 03 | 07 - 02 | 12 - 04 | 17 - 03 | 22 - 02 | 27 - 02 | 32 - 03 | 37 - 04 |
| 03 - 01 | 08 - 01 | 13 - 04 | 18 - 03 | 23 - 04 | 28 - 01 | 33 - 02 | 38 - 02 |
| 04 - 03 | 09 - 03 | 14 - 01 | 19 - 02 | 24 - 03 | 29 - 03 | 34 - 01 | 39 - 03 |
| 05 - 01 | 10 - 01 | 15 - 04 | 20 - 04 | 25 - 01 | 30 - 02 | 35 - 02 | 40 - 03 |

(Total marks- 2 x40=80)

Part II

Part A

(1) (A).

i.

1 hydro power 2 Thermal power (coal) (1)

ii. 1 sun light 2 wind (1)

iii. chemical energy → heat energy → kinetic energy → electric energy (2)

iv. Energy - heat Substance- C particles, sulphur dioxide (2)

v.

1 Minimum pollution of the environment

2 low cost for fuels/ energy (2)

(B)

i.

1 destroying the river bank 2 lowering the ground water level / overflowing during rainy season (1)

ii. For a correct food chain (2)

iii.

1 mixing poisons with river water 2 increasing temperature of the river water (1)

- iv. paddy cultivating in mountain slopes using the nature of the land (1)
- v.
- 1 changing the properties of water 2 reduction of the populations of organisms (2)

Total marks-15

(2)

- A i. A and B (2)
- ii. C (1)
- iii. C, I, D (2)
- iv. highest - H lowest - C (2)
- v. DH_3 (2)
- vi.
- 1 C or K 2 B or H (2)

- B i. Carbon (1)
- ii. diamond and graphite (1)
- iii. co-valent bonds (1)
- iv. graphite (1)

Total marks-15

(3) A i.

1. Domain Eukarya 2 Domain Archaea 3 Domain Bacteria (2)
- ii. Protista, fungi, plantae, animalia (2)
- iii. Cnidaria, Annelida, mollusca, arthropoda, Echinodermata (3)
- iv. Ulva (1)

B

- i. for a suitable answer (1)
- ii. Carolus Linnaeus (1)
- iii. Na - *Mesua nagassarium* (1)
- iv. to give a common name for an organism. (1)

- C i. When one of two bodies in contact with one another moves or tries to move relative to the other, the second body exerts a force that tends to stop this relative motion. This phenomenon is known as friction. (1)

ii. for suitable examples (1)

iii. The frictional forces that act on a body as it just begins to move. This force includes the small additional force that is necessary to give it a velocity. (1)

Total marks-15

(4)

A i. A- plasma membrane B- Mitochondrion, C- RER D- Nucleus E- SER (2.5)

ii.

a. Ribosome

b. Endoplasmic Reticulum

c. Mitochondrion,

d. Nucleus (4)

iii. Cell wall and chloroplast (1)

B

i. Growth, reproduction, excretion etc (1.5)

ii. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Energy}$ (2)

iii.

Meiosis

1. Takes place in two divisions

2. Takes place only in diploid cells

3. Variations occur

4. Four daughter cells result at the end of the division

Mitosis

Only one division

Takes place in both diploid & haploid cells

No variations. The changes in chromosome are rare

Two daughter cells result at the end of the division (4)

Total marks-15

Part B

(5)

- i. A- Cnidaria/ coelenterates C- Arthropoda (2)
- ii. for correct examples (2)
- iii. Young ones feed on breast milk, secreted by mammary glands.
Four chambered heart.
Warm blooded. (2)
- iv. A, B and C are groups of invertebrates but mammals are vertebrates (1)
- v. Easy to study about organisms

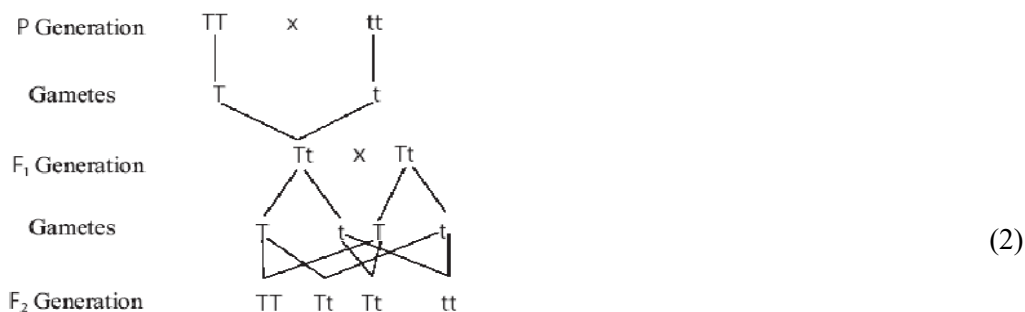
Ability to get an idea about the whole biosphere by studying about few
Ability to reveal the relationship between different groups of organisms
Identification of organisms with economical uses to human (2)

B.

- i. Can be easily grown
Can obtain the yield within a short time period
Can obtain pure breeding plants.
Naturally self pollinating. When necessary cross pollination is also possible
Ability to obtain off springs by breeding and can continue the generations (2)
- ii. The selected characteristics are not changed for many generations (2)
- iii.

- a Colour of the pod - Green
- b Shape of the seed – Round
- c Colour of the seed – Yellow (3)

iv.



- v. pheno type geno type (2)
- Tall TT/ Tt
- Short tt

Total marks-20

(6) **A** –

- i. 2, 8, 7. (2)
- ii. for a correct property (2)
- iii. period 4 and the group II (2)
- v. CA_2 (2)
- v. Exchange electrons (2)
- vi. To identify the properties of elements easily / to study about elements easily (2)

B.

- i. Reactivity of the elements with water, acid and base (2)
 - ii. for two correct answers (1)
 - iii. the solution becomes pale/ Mg disappears (2)
- $$Mg_{(s)} + CuSO_{4(aq)} \rightarrow MgSO_{4(aq)} + Cu_{(s)} \quad (2)$$

- iv. For a correct method (1)

Total marks-20

- (7) **A**
- i. The rate of change of the velocity is known as the **acceleration**. A negative acceleration is known as a **deceleration**. (2)
 - ii. Gradient of the graph gives the acceleration (1)
 - iii. Newton's second law-
The acceleration of a body is directly proportional to the unbalanced force acting on it, while it is inversely proportional to its mass. (2)
 - iv. a) 50 kg m s^{-1} (1)
b) 5m (1)
 - v. The limiting frictional force depends on the nature of the surfaces in contact and the normal reaction between the two forces (2)
 - vi. 25 N towards East (1)

B –

- i. 20 m s^{-1} (1)
- ii. 0.8 m s^{-2} (1)
- iii. 1125 seconds (1)
- iv. 22500 m (1)

- v. 0.4 m s^{-2} (1)
- vi. 0s-25s- acceleration (1)
 - 25s- 1150s- uniform velocity (1)
 - 1150s- 1200s deceleration (1)
- vii. 8800000 J (2)

Total marks-20

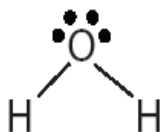
(8)

- i. Utilizing the energy from sunlight, the cells containing chlorophyll in green plants synthesize food using carbondioxide and water as raw materials. This process is called photosynthesis. (2)
- ii. For the correct equation (2)
- iii. For a correct food chain (2)
- iv. plants as autotrophic – they can produce their own food
 - animals as Heterotrophic - they cannot produce their own food, depend on the plants for food. (2)
- v. 180 g (2)
- vi. 0.5 mol (2)
- vii. 3.011×10^{23} (2)
- viii. protein, lipids, vitamins, minerals (2)
- ix. Obtain a solution of food, into a test tube.
 - Add few drops of Benedict solution to the above solution.
 - Immerse the above solution in a water bath and heat.
 - Can observe colour change as below.
- Observation (- Blue –Green, Green -Orange -Brick red yellow precipitate) (2)
- x. - advantage – as a raw material for photosynthesis
 - disadvantage - a reason for global warming (2)

Total marks-20

(9)

- i. evolving more heat (2)
- ii. placing the set up in a water bath (4)
- iii. at a flame burns producing ‘pop’ sound (2)
- iv.



(4)

- v. 1 m s^{-2} (4)
- vi. 110 m (4)

Total marks-20