

SUBJECT NAME.....

MATERIALS.....

INDEX NUMBER.....

use only

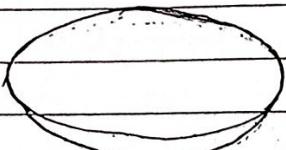
1	On	i	ii	iii	iv	v	vi	vii	viii	ix	x
Ans	C	B	B	A	E	C	B	B	E	D	

1mark @ = 10marks

2.	On	i	ii	iii	iv	v
Ans.	C	H	I	E	A	

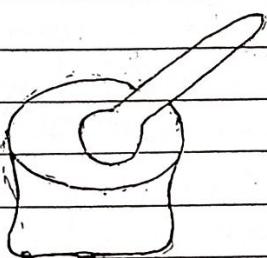
1mark @ = 5

3. (a)



Petri dish./watch glass

(b)



Mortal and pestle

(c)

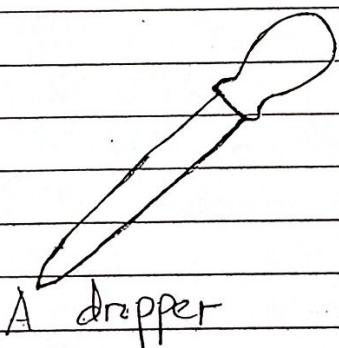
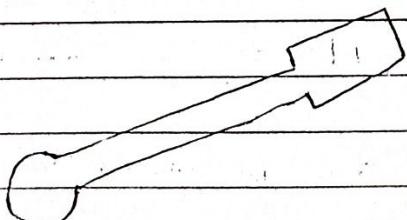


Diagram = 01

Caption = 00%

Total 1.5marks @ = 6marks

(d)



Spatula

4 Changes of the body when overcooled

(i) Shivering

(ii) Contraction of hair erector muscles

(iii) Vasoconstriction

Total. 2marks @ = 6marks

Explanations of  
mentioning point of

5 (a) Food Web

Bacteria

1mark

Lion

Hyena

1mark

Buffalo

Wildbeest

1mark

Grass

Shrub

1mark

Correct trophic levels @ 1mark

(b) If bacteria are eliminated from the ecosystem, there will be no accumulation of dead organic matter

Since the decomposers are removed, hence no recycling

2marks

Total = 6marks

6

(a) Puberty

2marks

(b) Physiological changes in Tuna

- Voice deepens

- Wet dreams begin

- Body size increases rapidly

1mark @ = 2marks

- Muscles grow

- Hairs grow on the face (beards) and in the armpits and pubic regions

- Sperm production begins.

- Reproductive organs enlarge.

Physiological changes in Juvenilia

- Breasts develop

- Body size increases rapidly

- Menstruation begins

- Pimples may develop on the face

- Hairs grow in the armpits and pubic regions.

1 mark @ = 2 marks  
(Any four points)

7. (a) Movement - Is the act of changing position or posture of part of an organism

Locomotion - Is the act of changing position of the whole organism from one place to another.

1 mark @ = 2 marks

(b)

(i) Chaetae

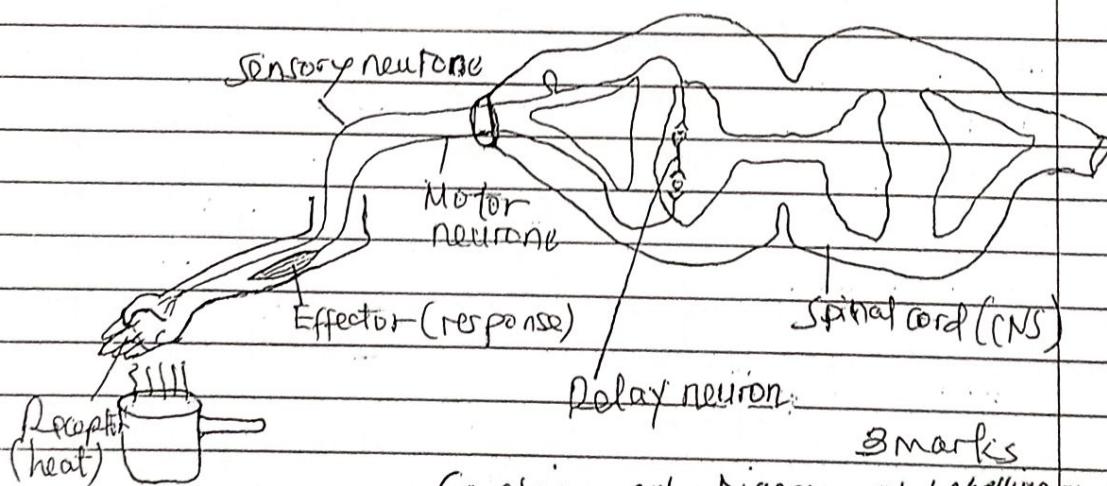
(ii) Flagella

(iii) Pseudopodia

(iv) Cilia

1 mark @ = 4 marks

8



3 marks

Caption of, diagram of, Labelling any 3 @ 1%

When the hand touched the hot pot, the sensory neuron detected the change, through the receptors (skin) and transmit information (impulse) to the relay neuron and

transmitted to the spinal cord (CNS). Kolayne neurons receive information from CNS and pass it to the motor neuron and finally to the effector (muscle) for quick response.

3 marks.

Total = 6 marks

9 (a) Temperature and Water

1 mark

(b) - Seeds in set up A will germinate

- Seeds in set up B will not germinate 1 mark = 1.5 marks

- Seeds in set up C will not germinate

(c) To soften the testa

- To hydrolyse the stored food

1.5 marks

- To create a good medium for enzymes to work.

(d) It was used as a control experiment (to prove that water is important for germination) 2 marks.

Total = 6 marks

10 (a) Let S represent allele for smooth seed coat

1/2 mark

Let s represent allele for wrinkled seed coat

1/2 mark

Parent phenotype: Smooth seed coat X Wrinkled seed coat.

1/2 mark

Parent genotype:

SS

ss

Meiosis/Segregation:

1/2 mark

Gametes:

S

s

- Fertilization:

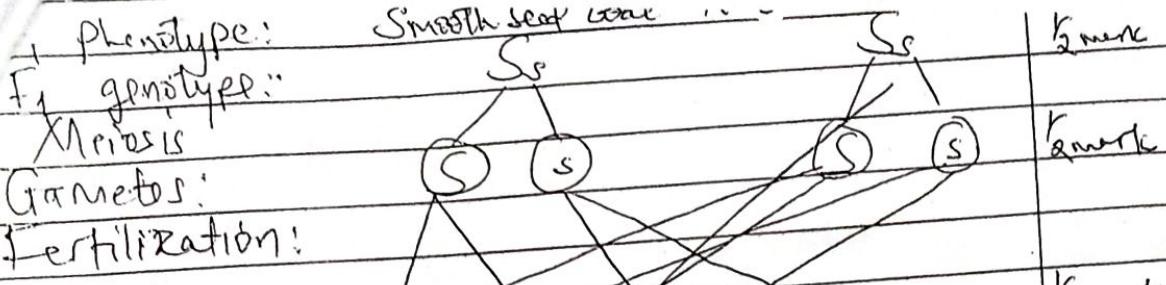
1/2 mark

F<sub>1</sub> generation: Ss Ss Ss Ss All smooth seed coat.

1/2 mark

(b) The percentage of ~~phenotype of~~ wrinkled seeds in the F<sub>2</sub> generation ~~cancelled.~~

✓



F<sub>2</sub> generation SS Ss Ss ss  
 phenotype: 3 smooth seeds 1 wrinkled seed  
 % of wrinkled seeds =  $\frac{1}{4} \times 100\%$   
 = 25% cancelled

∴ Percentage of phenotype of wrinkled seeds is 25% of F<sub>1</sub> is  
 Total = 6 marks.

- 11 (a) Binomial nomenclature is the scientific system of naming organisms into two names. 2 marks  
 (b) - Genus  
 - Species 1 mark @ = 2 marks

- (c)
  - (i) Enable scientists all over the world to identify and study organisms easily.
  - (ii) It makes study of organisms in groups easy
  - (iii) It enables scientists to make predictions
  - (iv) It makes communication among scientists easy and avoid confusion. (any 2 points)1 mark @ = 2 marks

Total = 6 marks

✓

SUBJECT NAME.....

## Four Theories of Origin of Life

i) Special Creation Theory  
This Theory states that life was non-existent up to a certain time And there a supernatural power (Supreme Being or God) created the Universe and Life.

This Theory is based on Holy Book e.g. Bible and Quran and others. For example in the Holy Bible the first Book Genesis 1:1-26 an account of creation is given

ii) Spontaneous Generation Theory  
This Theory is based which is believed that living organisms emerged spontaneously from Non-Living Matter for example it is believed that frogs, worms and snakes came from sand or dust, while rats arose from garbage. The concept of living organisms arising from Non-Living matter is called abiogenesis

### iii) Cosmopolitan Theory

This Theory states that life arrived on the Earth from somewhere else, namely outer space and it could have happened over a period of time on different occasions

### iv) Organic Evolution Theory

Also known as Scientific Theory of evolution, this theory postulates that life probably started by catalytic effect of Ultra Violet rays, Gamma rays or lightning which made free elements to combine to form molecules. These first four elements to form

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Were Hydrogen, Ammonia, Water Vapour  
and Methane.

The Gaseous Molecules further combine  
to form Stable System Capable of  
releasing energy and replicating  
itself

#### V. Steady State Theory

It says that the Earth had  
no origin and that it is always  
capable of supporting life. Furthermore  
if the Earth is changing only a  
small change occurs.

Mentioning a theory of  
Explanatory 01

Any four theory @ 01<sup>2</sup> = 0.6 Max

12 Explain four theories of origin of life

- (I) Special creation
- (II) Spontaneous generation
- (III) Cosmogeny theory
- (IV) Steady state theory
- (V) Organic evolution

(Any four points)  
1.5marks @ = 6marks

13 (i) Causal agent

Corona virus

(ii) Symptoms

- Coughing
- Sneezing
- Fever
- Sweating
- Breathing difficulties.
- Head ache

(iii) Transmission

- Through contact with infected person.
- Through inhaling infected air
- Through contaminated fluid in the eyes, nose, or mouth

(iv) Prevention

- Wearing mask
- Clean your hands
- Keep a safe distance
- Use of sanitizers

(any three points)

1.5marks @ = 15marks

14 Four ways in which fungi are beneficial to human being  
(Explained)

- (i) Used as a source of food eg mushrooms

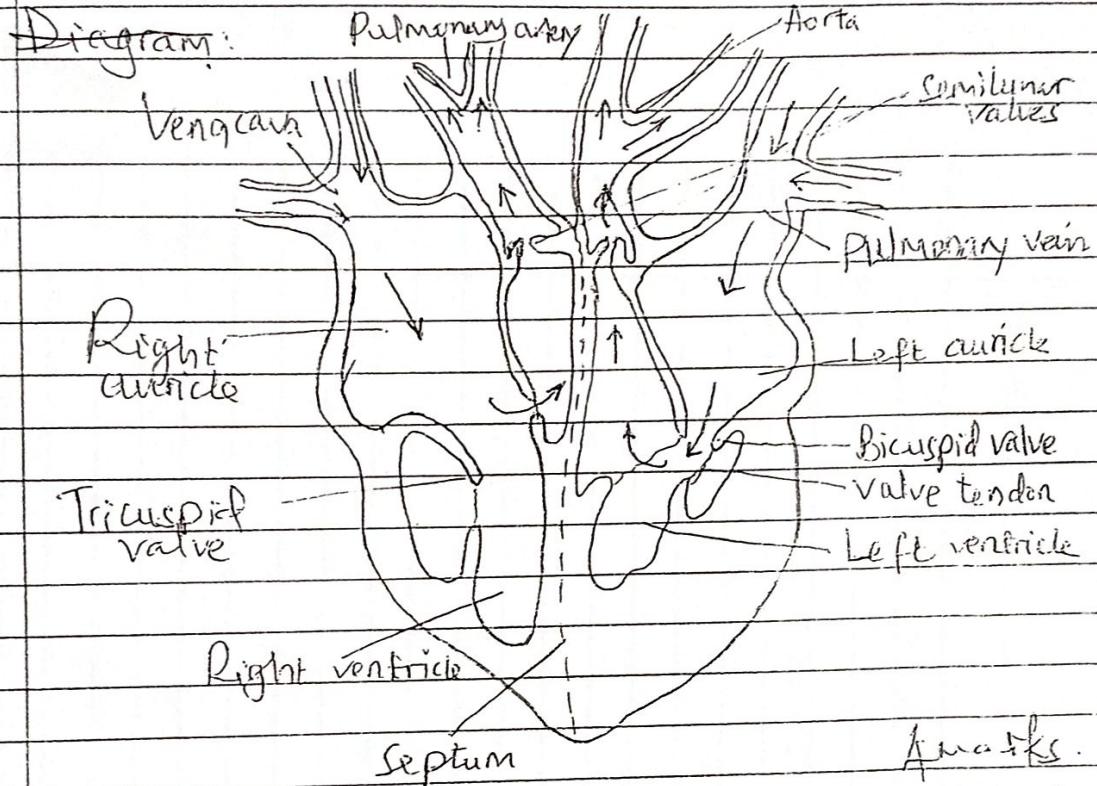
Question  
Number

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For  
Examiner  
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Diagram:



A diagram of heart to show Internal structure

Diagram 02

Caption 00%

any 7 labels @ 00%

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## Control of pests in agriculture.

any 4 points

{ Mention point 01  
Explanation 01  
Conclusion 01  
Total marks 10

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write in  
this margin

14 Four ways in which fungi are beneficial to human being.

Fungi are spore producing organism which feed on organic matter including moulds, yeast, mushroom and toadstools.

Fungi are beneficial to mankind in a number of ways. (Introduction of work)

- Some are source of food.

The edible mushrooms are used by human being as a source of food. They are rich protein and some in vitamins.

- Production of antibiotics. One of the fungi called *Penicillium notatum* is used by pharmacists to produce antibiotic called penicillin. Penicillin is an important drug in treating a number of bacterial diseases.

- Used in fermentation. Production of alcohol such as beer require the activity of some fungi e.g. Yeast. The same yeast are used in baking to make the dough rise.

- Decomposition of dead organisms. Saprophytic fungi causes decomposition of dead organisms. As these organisms decompose, nutrients are released from them. These nutrients are used by other organisms for normal growth.

- Provision of mineral matter to plant. Some fungi called Mycorrhiza grow between the roots of leguminous plant such as bean and pea. These fungi absorb minerals salts from the soil which are taken by these plant.

In addition to this point, one can list so many other instances of fungi to mankind as production of lactic acid, genetic engineering and

12 Explain four theories of origin of life

- (i) special creation
- (ii) Spontaneous generation
- (iii) Cosmocyclic theory
- (iv) Steady state theory
- (v) Organic evolution

(Any four points)  
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✓

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were Hydrogen, Ammonia, Water Vapour and Methane. The gaseous molecules further combine to form stable system capable of releasing energy and replicating itself.

### V/ Steady State Theory

It says that the Earth had no origin and that it is always capable of supporting life. Furthermore if the Earth is changing only a small change occurs.

Mentioning a theory of explanation of Any four theory @ 0.5 = 0.6 Max

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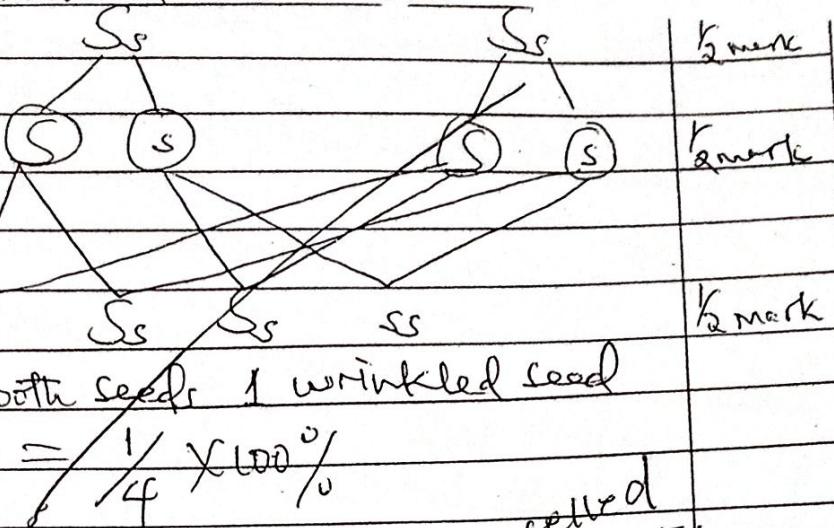
Also known as Scientific Theory of evolution, this Theory postulates that life probably started by catalytic effect of Ultra Violet rays, Gamma rays or lightning which made free elements to combine to form molecules. The first four elements to form

F<sub>1</sub> phenotype:  
Smooth seed coat  
F<sub>1</sub> genotype:  
X Meiosis

Smooth seed coat ..

Gametes:

Fertilization:



ii (a) Binomial nomenclature is the scientific system of naming organisms into two names. 2 marks

- (b) - Genus  
- Species

1 mark @ = 2 marks

(c)

(i) Enable scientists all over the world to identify and study organisms easily.

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1 mark @ = 2 marks

Total = 6 marks.

✓

P.

transmitted to the spinal cord (CNS). Only neurons receive information from CNS and pass it to the motor neuron and finally to the effector (muscle) for quick response.

3 marks.

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- 9 (a) Temperature and Water  $\frac{1}{2}$  mark = 1 mark
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 - To hydrolyse the stored food  $\frac{1}{2}$  mark = 1.5 marks  
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Parent genotype:  $SS \times ss$

Meiosis / Segregation:  $\frac{1}{2}$  mark

Gametes:

- Fertilization:

F<sub>1</sub> generation:  $Ss$   $Ss$   $Ss$   $Ss$  All Smooth seed coat.  $\frac{1}{2}$  mark

b) The percentage of ~~phenotype of~~ wrinkled seeds in the F<sub>2</sub> generation cancelled.

✓

- Reproductive organs enlarge.

Physiological changes in Julian

5 mark @ = 2 marks  
(Any four points)

- Breasts develop

- Body size increases rapidly

- Menstruation begins

- Pimples may develop on the face

- Hairs grow in the armpits and pubic regions.

7. (a) Movement — Is the act of changing position or posture of part of an organism

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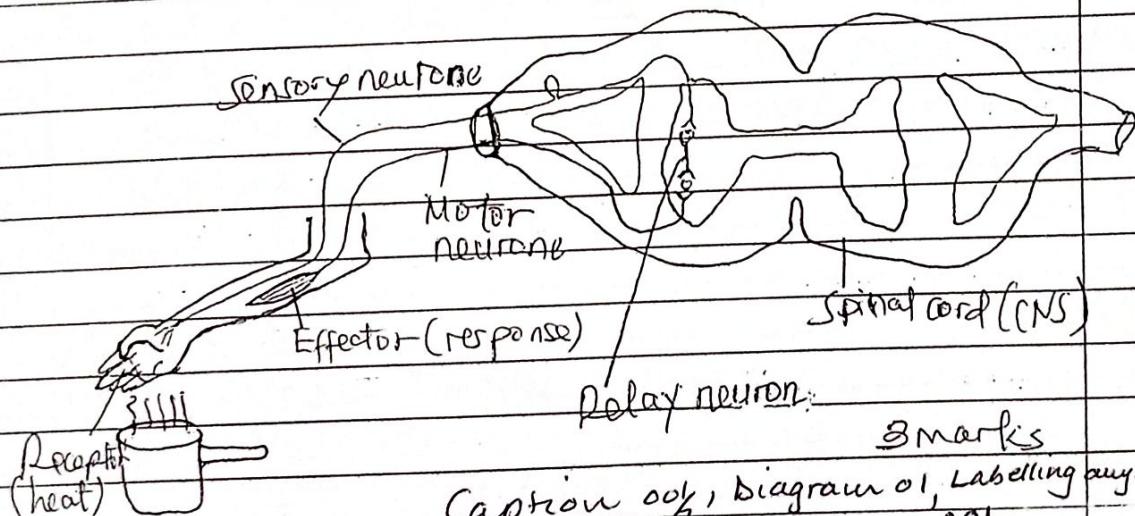
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(iii) Pseudopodia

(iv) Cilia

1 mark @ = 4 marks

8



Caption 00%, Diagram 01, Labelling 00%  
3 marks

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Explanations of  
mentioning point of

5

(a) Food Web

Bacteria

1 mark

Lion

Hyena

1 mark

Buffalo

Wildbeest

1 mark

Grass

Shrub

1 mark

Correct trophic levels @ 1mark

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2 marks

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2 marks

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- Sperm production begins.

## STANDARDISED MARKING SCHEME P

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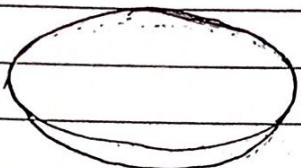
I	On	i	ii	iii	iv	v	vi	vii	viii	ix	x
Ans	C	B	B	B	A	E	C	B	B	E	D

1mark @ = 10marks

2.	On	i	ii	iii	iv	v
Ans.	C	H	I	E	A	

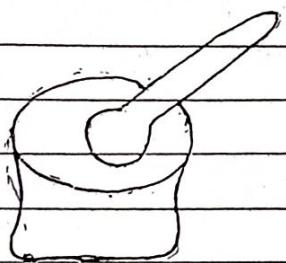
1mark @ = 5

3. (a)



Petri dish, watch glass

(b)



Mortar and pestle

(c)

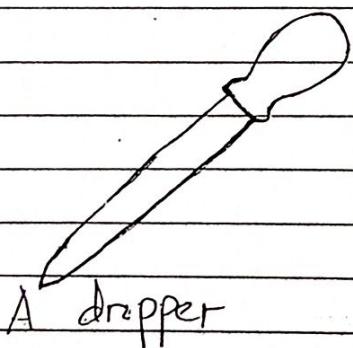
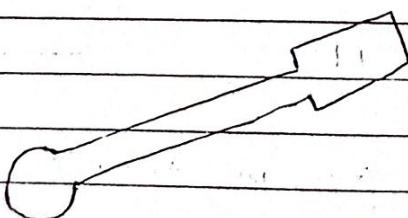


Diagram = 01

Caption = 00%

Total 1.5marks @ = 6marks

(d)



Spatula