| NAM | E: CLASS: |
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| FORM | M FOUR BIOLOGY |
| 1. | Distinguish between transcription and translation as used in genetics (2mks) |
| 2. | Using one example in each case distinguish between continuous and discontinuous variation (2mks) |
| 3. | State three causes of variations (3mks) |
| 4. | A woman who cannot roll her tongue marries a man who is a tongue roller but is the son of a non roller father what would be the chance of them producing a non roller child?(Ability to roll the tongue id dominant to non roller) (5mks) |
| 5. | a) Explain the difference between incomplete and complete metamorphosis(2mks) |
| | b) Outline the stages of metamorphosis in:(2mks)(i). Cockroach |
| | (ii). Housefly |

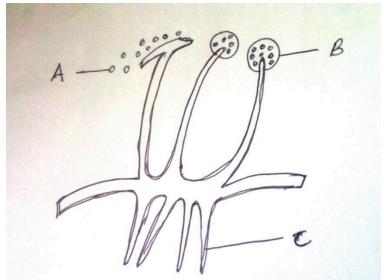
| (| F1 - 641 - 6-11i 4i44 | |
|--------|--------------------------------------|---|
| 0. | For each of the following traits st | ate whether it is continuous or discontinuous (5mks) |
| Chara | cteristic type of variation | |
| i. | Size of the breast | |
| ii. | Blood groups in man | |
| iii. | Finger prints | |
| iv. | Size of cobs in maize | |
| V. | Ability to taste phenythiourea | |
| Ex | plain the meaning of the following | g terms in human reproduction (3mks) |
| | I Implantation | |
| | I. Implantation. | |
| | | |
| I | I. Ovulation. | |
| | | |
| | | |
| II | I. Parturition. | |
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| | | |
| 7 In a | aartain anaging of plants, the gang | for rad flawars in addeminant to the gone for white flawars. In one |
| | ment of such plants all F1 plants ha | for red flowers in codominant to the gene for white flowers. In one ad pink flowers |
| слреп | mont of such plants an 11 plants he | uu piik nowers. |
| a) Usi | ng appropriate letter symbols work | out the genotypes of the F1 off springs(4mks) |

(1mk)

c) What is meant by the term apical dominance?

| b)If one of the F1 offspring was crossed with a white parent, what would be the phenotypic ratio of their offspring (3mks) |
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| c)what type of cross is shown by the set up in (b) (1mk) |
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7. The diagram below represents a mature bread mould



| | VV | 14 | | - (|
|--------------------|---------|-------|--------|-----|
| Name the structure | res A,B | and C | (3Mks) | |
| A | | | | |
| B | | | | |

| C |
|---|
| b)what is the physiological significance of having testes outside the body of the human male?(2mks) |
| |
| c) What do you understand by the term double fertilization in plants? (2mks) |
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| 8). In human haemophilia, is a sex linked ,caused by recessive gene which exerts its effect when in homozygous state. A man whose mother was haemophilic marries a normal woman whose father was haemophilic. H represents non haemophilic , h represents haemophilia |
| a)What are the possible genotype of |
| i. The man(1mk) |
| ii. The woman(1mk) |

| b) Showing your working, find out the possible genotypes of their F1. (4mks) |
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| c)(i) what is the probability that their first born son is haemophilic (1mk) |
| (ii)what is the probability that their first born child is normal?(1mk) |
| d) Describe how a breeder can know the genotype of F1 showing dominant phenotype (2mks) |
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