

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
033/2 BIOLOGY PRACTICAL FOR CERTIFICATE OF SECONDARY
EDUCATION EXAMINATION 2020

A CHECKLIST OF SPECIMENS, CHEMICALS AND APPARATUSES

1.0 IMPORTANT

The National Examinations Council has prepared a checklist of specimens, chemicals and apparatuses for Biology Practicals. As a head of the school, **make sure that all requirements suggested in this checklist are available in the school laboratory.** Some of these, will be used for Certificate of Secondary Education Examinations (CSEE) 2020 Biology Practicals as will be prescribed in the 24 Hours Advance Instructions.

2.0 SPECIMENS, CHEMICALS AND APPARATUSES

In addition to normal fittings of a Biology laboratory, candidates will require some of the listed specimens, chemicals and apparatuses as will be prescribed in the 24 Hours Advance Instructions.

2.1 Specimens

(a)	Bean seedling (2 weeks germination period).....	1 per candidate
(b)	Sisal leaf	1 per candidate
(c)	✓Tilapia fish	1 per candidate
(d)	Housefly	1 per candidate
(e)	✓Butterfly	1 per candidate
(f)	✓Medium size cassava	5 cm long per candidate
(g)	Medium size carrot.....	1 per candidate
(h)	✓Earthworm	1 per candidate
(i)	✓Mushroom.....	1 per candidate
(j)	✓Crab	1 for 3 candidates
(k)	✓Spider	1 per candidate
(l)	✓Rat/ guinea pig	1 for 3 candidates
(m)	✓Beetle.....	1 for 3 candidates
(n)	Tick	1 per candidate
(o)	✓Bee	1 per candidate
(p)	✓Cactus stem	1 per candidate
(q)	Variegated leaves	1 per candidate
(r)	Vegetable cooking oil	5 ml per candidate
(s)	Dry grinded tea leaf	5 g per candidate
(t)	Tibia bone (from goat).....	1 per candidate
(u)	Fibula bone (from goat).....	1 per candidate
(v)	✓Hibiscus flower.....	1 per candidate
(w)	Coconut fruit	1 per candidate

(x)	Lemon fruit	1 per candidate
(y)	Orange fruit	1 per candidate
(z)	Wheat flour	20 g per candidate

2.2 Chemicals

(a)	Potassium permanganate crystals	5 g per candidate
(b)	Iodine solution	10 ml per candidate
(c)	Benedict's solution	20 ml per candidate
(d)	Dilute hydrochloric acid	20 ml per candidate
(e)	Dilute sodium hydroxide solution	20 ml per candidate
(f)	Copper sulphate solution	10 ml per candidate
(g)	Sudan III solution	10 ml per candidate
(h)	Tape/rain water	1000 ml per candidate
(i)	Methylated spirit	5 ml per candidate
(j)	Sand	20 g per candidate
(k)	Table salt	20 g per candidate
(l)	Sugar	20 g per candidate

2.3 Apparatuses

(a)	Beaker (100 ml)	1 per candidate
(b)	Watch glass/Petri dish	4 per candidate
(c)	Test tubes	4 pieces per candidate
(d)	Bunsen burner/ source of heat	1 per candidate
(e)	Pipette/ dropper with measurements	1 per candidate
(f)	Test tube rack	1 per candidate
(g)	Test tube rack	1 per candidate
(h)	Hand lens	1 per candidate
(i)	Beam balance	1 for 50 candidates
(j)	Scalpel	1 per candidate
(k)	Measuring cylinder (100 ml)	1 per candidate
(l)	Water trough	1 per candidate
(m)	White tile	1 per candidate
(n)	Conical flask	1 per candidate
(o)	Microscope	1 for 10 candidates.

2.4 Other requirements

(a)	Medium size plain mirror	1 piece per candidate
(b)	Cotton wool	1 piece per candidate
(c)	Tooth pick	3 pieces per candidate
(d)	Stickers	6 per candidate
(e)	Plain paper (A ₄)	1 per candidate
(f)	Clock	1 for 20 candidates.