UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2009 question paper for the guidance of teachers

0600 AGRICULTURE

0600/02 Paper 2 (Core Theory), maximum raw mark 80

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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1 **(a)** fencing/building/burning; [1]

(b) shelter; [1]

(c) maize/wheat/millet/oats/rice/sorghum; [1]

(d) donkey – transport;
rabbit – meat – skins;
goat – meat – milk – skin;
one tick in wrong place 2 marks
two ticks in wrong places 1 mark [3]

(e) **(i)** provides money/foreign exchange; [1]

(ii) high fuel/transport costs;
causes shortages at home;
any one [1]

(f) **(i)** America – Asia – Europe – Africa;
all right 2 marks
two right/all correct but reverse order/
correct but with North, East etc 1mark [2]

(ii) Africa needs all the limited fertile land for food production/Africa very infertile/
low CO_2 emissions/little industry; [1]

[Total: 11]

2 **(a)** **(i)** bedrock;
accept parent rock

(ii) **A**; [2]

(b) sand;
0.02 – 0.002;
accept 0.002 – 0.02 [2]

(c) **A**; if clay is stated here and there is correct explanation following 1 mark
because it consists of clay/small particles close together; [2]

(d) **(i)** construction detail;
depth detail; [2]

(ii) animals fall in open ditches/saves space/can cause erosion; [1]

[Total: 9]

3 **(a)** grown without artificial/man-made chemical fertiliser/
grown with only organic (FYM) fertiliser;
grown without chemical pesticides/herbicides;
reject grown without chemicals [2]

(b) amount of nutrient added cannot be quantified;
time of application limited;
seeds/pests can be introduced any 2
reject smell
accept bulky to use [2]

(c) **(i)** potassium;

(ii) improved seed/fruit; [2]

(d) different crops grown in one area at different times/seasons;
regular sequence;
example given/benefit stated; any 2 [2]

(e) on any of the arrows coming from nitrogen gas in the air; [2]

[Total: 10]

4 **(a)** cause excess water loss/wilting;
flatten crop; reject damage unless qualified
introduce fungal infection;
promote pollination; any 2 [2]

(b) provides conditions suitable for fungal infection;
rapid/weak growth;
delicate seedlings/need to harden off carefully
any 2
accept prevents excess transpiration
accept seeds can rot [2]

(c) **(i)** transpiration;

(ii) xylem; accept vascular bundle [2]

(iii) movement of water (molecules) from a region of its high concentration to a region were it is in low concentration;
through a semi permeable membrane; [2]

[Total: 8]

5 **(a)** goggles;
respirator; [2]

(b) not in windy/rainy conditions; answers must relate to spraying
direct nozzle close to target; reject wash hands/mix correctly
not spray near water source; [2]

(c) not using enough water to dilute chemicals;
water used leaches to water course / persists in soil;
accept washing equipment in streams [2]

(d) named pest and control organism;
method of control – predation/parasitic; [2]

[Total: 8]

6 **(a)** **(i)** P on penis; reject on foreskin

(ii) G on testis; G on anther; reject on stigma

(iii) F on ovary/ovule; [4]

(b) will <u>not</u> be fertile/no male activity; reject may be infertile
aggressive/calm;
grow quicker/more fat; any 2 [2]

(c) period when mother provides milk for young; [1]

(d) provides antibodies/immunity/disease resistance;
provides high level of protein/very nutritious; [2]

[Total: 9]

7 **(a)** **(i)** isolates itself/ruffled feathers/red droppings/white droppings/runny nostrils/watery droppings/ not eating/foam from eyes/still or inactive/head down;
any 2 [2]

(ii) isolate ill chick; accept kill it [1]

(b) protein;
energy; accept provide warmth
vitamins; [3]

(c) production because high levels of protein and carbohydrate needed for rapid growth;
reject because chick is growing [1]

(d) **(i)** unit of inheritance/part of chromosome/length of DNA; [1]

(ii) MM Mm [1]

(e) cross gives MM, Mm, Mm and mm;
25% of offspring, mm, would lack rapid growth gene/only 25% have rapid growth gene/allele; [2]

[Total: 11]

8 **(a)** **(i)** suitable **A** frame drawn; [1]

(ii) prevent rotting;
provide firm anchorage/allows no movement/
gives stability; reject strong/support [2]

(iii) larger wire area in **B** makes it cooler/more wind/better ventilation;
accept ref to **A** building
i.e. higher surface of corrugated
iron in **A** makes it hotter; [1]

(iv) blocks or cement strong/cannot be pushed in, dug under/chewed through;
accept ref to **B** building
i.e. sacking – not strong/easy to get under/
chew through; [1]

(b) pump from stream;
pipe system;
water tower/water tank;
ball valve system to drinker; [3]

[Total: 8]

9 **(a)** any suitable e.g. Star grass/Paspalum grass/Rhodes grass/Weeping Love grass;
accept local names [1]

(b) **(i)** **A**; [1]

(ii) **C**, as it has slow growth/deep roots; [1]

(iii) **A/D** fast growing/good yield; [1]

(iv) **B**, prefers heavy soil; accept **C** needs sandy soil which is acidic [1]

(c) the number of (LSU) livestock that an area of land can support <u>without deterioration</u>; [1]

[Total: 6]