Name: Form:

SCIENCE FUNDAMENTAL KNOWLEDGE QUIZ BOOKLET

Key Stage 4 Paper 2 Biology



B5 – Homeostasis 1

State the 4 parts of the nervous system Brain, Neurones, Spinal cord, receptor cells	What is this the definition of 'A change in the environment' Stimulus	Which type of cell detects a stimulus? Receptor	Name the 3 neurones in order Sensory, Relay, Motor	What travels along a neurone? Electrical impulse
In a conscious action where does the electrical impulse travel to? Brain	In a reflex action where does the electrical impulse travel to? Spinal cord	Put a reflex action in order: Relay neurone, Spinal cord, Motor neurone, Stimulus, Effector, Receptor cells, Sensory Neurone, response 1) Stimulus, 2)Receptor cells, 3)Sensory, 4)Relay, 5)Spinal cord, 6) Motor, 7) Effector, 8) Response		What is the junction between 2 neurones called? Synapse
What diffuses across the synapse? Neurotransmitters	State a test that can be used to test reaction time Ruler drop test	State 3 factors that can affect reaction time Age, Amount of sleep, amount of caffine	Where is an electrical impulse generated? Receptor cells	Calculate the uncertainty on the following results: 12.2, 12.7, 12.0, 12.5 12-12.7 = 0.7/2 = 0.35
State 3 reasons why we repeat an experiment Calculate a mean, spot anomalies, reduce random error	Which response is faster reflex or conscious? Reflex	Which receptors detect the following: Noise: <u>Sound</u> Taste: <u>Chemical</u>	Describe how information is transferred across the synapse. Neurotransmitters, Diffuse Across the synapse and Bind To the next neurone	

B5 – Homeostasis 2

What is the name of the	Describe what a hormone	Name the master gland	State which gland these	State which gland these
system that contains the	is		hormones are released	hormones are released from:
hormones and glands?	Chemical messenger, that	Discharge along	from:	Glucagon: Pancreas
Endocrine System	travels in the blood	Pituitary gland	Thyroxine: Thyroid	Oestrogen: Ovaries
			Adrenaline Adrenal	Testosterone: <u>Testes</u>
			Insulin: Pancreas	
Which hormones control	What is this the definition	Describe how glucose	Which type of diabetes	State a treatment and a cure
the following:	of:	levels are lowered:	doesn't release insulin?	for type 1 diabetes:
Metabolic rate: Thyroxine	'Regulation of internal	Panaceas detects a	Type 1	Insulin injections
Heart rate: Adrenaline	conditions'	change and releases	Which type of diabetes	Treatment:
	Homeostasis	insulin, which travels in	does the liver not	
Lowers glucose: Insulin		the blood to the <u>Liver</u> , where the glucose is	respond?	Cure:
		stored as <u>Glycogen</u>		Pancreas transplant/ Stem cell
		stored as <u>diyeogen</u>	Type 2	therapy
				<u> </u>
State which hormone does	State another name for	State which hormone are	HT Only - Describe how	<u>HT</u> - Describe stages of IVF
the following	releasing the egg and	in the contraceptive Pill/	the body responds if	1) FCI is injected into the
Maturas aggi FSU	which day does this	Patch/ Implant.	glucose levels are low.	FSH is injected into the ovaries
Matures egg: <u>FSH</u>	happen?	Oostrogen	Pancreas detects, release	2) Eggs Are collected
Builds up uterus lining:	Ovulation	<u>Oestrogen</u>		3) These are Fertalised in
<u>Oestrogen</u>	Ovuiduoii	HT Only- How do they	glucagon which travels in the blood to the liver, liver	a test tube
	<u>14 Days</u>	prevent pregnancy?	breakdown glycogen to	4) Turned into Embryo
Releases egg: LH		Little rout in L	glucose	5) Implanted back into
Maintains uterus lining:		Inhibits FSH which stops	giucose	the <u>Uterus lining</u>
<u>Progesterone</u>		the egg maturing		uie <u>oterus inini</u> g

B6 – Inheritance 1

Name the 3 stages of cell cycle in order Interphase, Mitosis, Cytokinesis	Which stage of the cell cycle does the chromosomes pull to each of the cell Mitosis	Which stage of the cell cycle does the cell membrane divide Cytokinesis	Which stage of the cell cycle does DNA replicate Interphase	Which stage of the cell cycle does the nucleus divide Mitosis
How many cells are produced in: Mitosis: 2 Meiosis: 4	Which cell division produces gametes? Meiosis	Which type of cell division produces identical cells	What is sexual reproduction? Fusion of gametes	State something that reproduces asexually Bacteria
Why are asexual offspring identical? Clone, so have same DNA	Why are sexual reproduced offspring not identical 2 chromosomes from each parent	Describe the structure of DNA Polymer, 2 stands in a double helix	What is a gene? Small section of DNA	Describe the following genotypes BB: Homozygous Dominant Bb: Heterozygous bb: Homozygous recessive
What is the probability a BB Brown hair bb <u>Blonde</u> hair person <u>have</u> a Brown hair baby. 100%	What set of chromosomes for: Male: XY Female: XX	Is Cystic Fibrosis Dominant or recessive Recessive	State a Dominant inherited disorder Polydactyly	What is a genetic disorder caused by? Mutation to DNA

B6 – Inheritance 2

What causes a variation in a gene? Mutation	If a mutation is advantageous you are more likely to Survive	If you <u>survive</u> they can <u>Breed</u>	When they <u>breed</u> they pass on the gene to <u>Offspring</u>	Sate 4 reasons for extinction New Predator New Disease New Competition Extreme change in environment
What is a fossil? Remains of dead plants if animals from thousands of years ago	State 3 ways a fossil can form Preserved traces Lack of decay Minerals replacing bones	State 3 ways to prevent antibiotic resistant bacteria Finish all antibiotics Reduce use in animals Don't overprescribe	During selective breeding step 1: Parents are chosen with <u>Desired</u> characteristics	Step 2: These parents are Bread together
Step 3: Offspring with best characteristics are chosen Step 4: These are bread through many generations	State a disadvantage of selectively breeding animals Inherited diseases passed on Inbreeding	State a disadvantage of selectively breeding plants Inherited diseases passed on Reduce biodiversity	What is used to cut out a gene in genetic engineering? Enzyme	Where is the gene inserted into? Vector
Where is a vector transferred to? Embryo	Place the following in the correct order Class(3), Order(4), Kingdom(1), Phylum(2), Species(7), Genus(6), Family(5)	The binomial name of a pig is Sus scrofa domesticus. What is the species of a pig? Domesticus	State the 3 domains Archea True Bacteria (Prokaryotic) Eukaryotic	Which domain is a <u>bacteria</u> that lives in extreme conditions? Archea

B7 – Ecology

depends on an animal for Pollination, Nutrients from Idroppings How should a quadrat be placed? Randomly What is this piece of apparatus? Quadrat Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate percentage coverage of the quadrat? (Pollination, Nutrients from Idroppings) Logical Calculate producer An area was 10m by 20m. a quadrat was placed 10 times with the following population sizes Larger quadrat Place more times Place more times Place more times Logical Calculate producer An area was 10m by 20m. a quadrat was placed 10 times with the following population sizes Larger quadrat Place more times Place more times Logical Calculate producer An area was 10m by 20m. a quadrat was placed 10 times with the following population sizes Larger quadrat Place more times State 4 parts of the water carbon cycle Photosynthesis Combustion Short Longer	State one thing that a plant	State one thing an animal	What is a plant in a food	State a biotic factor that	State an abiotic factor that can
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