**TEST YOUR UNDERSTANDING**

MULTIPLE CHOICE

1) Memory formation involves changes in the of the brain in response to certain  being released.

a  structures; neurotransmitters

b  neurotransmitters; structures

c  synapses; neurotransmitters

d  structures; synapses

2 What does synapse formation during learning and memory formation involve?

a  proliferation

b  priming

c  myelination

d  strengthening of neural pathways

3  Which of the following neurotransmitters is most important in the neural basis of learning and memory formation?

a  adrenaline

b  seratonin

c  glutamate

d  melatonin

4  Studies have shown that learning often results in relatively permanent changes in the \_\_\_\_\_\_\_\_\_\_  of animals’ neurons.

a myelin

b synapses

c neurotransmitters

d soma

5  Plasticity of the brain is thought to occur:

a  only in children

b  only in response to medication

c  as a result of head injury

d  throughout life.

6  Long-term potentiation ­­­­­\_\_\_\_\_\_\_ synaptic strength and long-term depression \_\_\_\_\_\_\_it

a  increases; also increases

b  increases; reduces

c  reduces; also reduces

d  reduces; increases

7  When learning occurs and memory is formed changes occur in the brain, including:

a  pruning of synapses

b  formation of new synapses

c  long-term depression

d  myelination

8  A 36-year-old man and a six-year-old boy are admitted to the emergency ward with identical brain injuries after falling from their bikes. The six-year-old will be likely to recover more quickly because:

a  young people always heal more quickly than adults

b  the boy’s brain is still undergoing developmental plasticity

c  adult brains lack plasticity

d  the boy will experience adaptive plasticity.

9  During learning all of the following will occur except:

a  an increase in neurotransmitter production

b  an increase in the sensitivity of the dendrites of the postsynaptic neurons

c  an increase in the number of synapses

d  a decrease in the sensitivity of the dendrites of the postsynaptic neurons.

10 Flashbulb memories are:

a  fleeting memories from when we were a baby

b  short-term memories that are formed when  we are in danger

c  vivid, long-term memories of significant events in our life

d short-term memories.

SHORT ANSWER

11 Describe a neural pathway. 12 What is *synaptogenesis*?

2 marks 1 mark