Mark schemes

Q1.

[AO1 = 1]

C – Phonological loop

[1]

Q2.

[AO1 = 4 AO3 = 4]

Level	Marks	Description
4	7-8	Knowledge of the working memory model is accurate with some detail. Evaluation is effective. Minor detail and/or expansion is sometimes lacking. The answer is clear and coherent. Specialist terminology is used effectively.
3	5-6	Knowledge of the working memory model is evident but there are occasional inaccuracies/omissions. There is some effective evaluation. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately.
2	3-4	Limited knowledge of the working memory model is present. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1-2	Knowledge of the working memory model is very limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- version of STM which sees this store as an active processor
- description of central executive/visuo-spatial scratch/sketch pad; phonological store/loop; articulatory loop/control process; primary acoustic store; episodic buffer (versions vary – not all systems need to be present for full marks)
- information concerning capacity and coding of each store
- allocation of resources/divided attention/dual-task performance.

Credit other relevant content.

Possible evaluation points:

- use of evidence to support or refute the model

- explains how cognitive processes interact
- memory is active rather than passive
- provides explanation/treatments for processing deficits
- highlights different memory tasks that STM can deal with by identifying separate components
- explains results of dual task studies
- vague, untestable nature of the central executive
- supported by highly controlled lab studies which may undermine the validity of the model
- comparison/contrast with alternative models of memory is creditworthy, but description, eg of MSM is not.

Credit other relevant evaluation.

Only credit evaluation of the methodology used in studies when made relevant to the model.

[8]

Q3.

[AO1 = 6 AO2 = 4 AO3 = 6]

Level	Marks	Description
4	13-16	Knowledge of the working memory model is accurate and generally well detailed. Application is effective. Discussion is thorough and effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	9-12	Knowledge of the working memory model is evident but there are occasional inaccuracies/omissions. Application and/or discussion is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	5-8	Limited knowledge of the working memory model is present. Focus is mainly on description. Any discussion and/or application is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1-4	Knowledge of the working memory model is very limited. Discussion and/or application is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- version of STM which sees this store as an active processor
- description of central executive and sub-systems/components – visuo-spatial scratch/sketch pad (visual cache, inner scribe); phonological store/loop; articulatory loop/control process; primary acoustic store; episodic buffer (versions vary – not all sub-systems need to be present for full marks)
- information concerning capacity and coding of each store
- allocation of resources/divided attention/dual-task performance.

Possible application:

- in the early part of the conversation, Rory/the central executive can divide attention between the conversation and the game on his phone
- this is because the two tasks use different sub-systems: phonological store/articulatory loop for the conversation and VSSP for the game
- when he is asked to recount his route to school (a visuo-spatial task), this places too many demands on the VSSP
- this means Rory must abandon his game to free up more attentional resources because of the limited capacity of the stores.

Possible discussion:

- use of evidence to support or refute the model/individual sub-systems, eg Hunt – central executive; KF case study – separate visual and verbal stores in STM; Paulescu et al – PET scan; Logie – mental rotation task for VSSP
- explains how cognitive processes interact
- a view of memory that is active rather than passive (in contrast to the multi-store model)
- provides explanation/treatments for processing deficits, eg dyslexia
- explains results of dual task studies, eg Baddeley
- vague, untestable nature of the central executive
- supported by highly controlled lab studies which may undermine the validity of the model.

Credit other relevant material.

[16]

Q4.

[AO1 = 4]

For **each** component:

1 mark for name of component.
1 mark for brief outline of component.

Possible content:

- visuo-spatial sketch/scratch pad – temporary storage of visual and spatial information; inner eye; visual coding; can hold 3–4 items; visual cache, visual scribe
- phonological store/loop/articulatory loop/control process/primary acoustic store – limited capacity temporary storage system; holds acoustic information according to tone, volume, pitch, etc; inner ear; verbal rehearsal loop, sub-vocal speech; duration 1.5–2 secs; inner voice
- episodic buffer – integrates/synthesises information from other stores; link to LTM; modality free.

Credit components as identified/offered by the candidate whether global components or sub-components (eg visual cache).

[4]

Q5.

[AO3 = 4]

Level	Mark	Description
2	3-4	The evaluation of the central executive is clear and detailed. The answer is generally coherent with effective use of specialist terminology.
1	1-2	The evaluation of the central executive is limited or muddled. Specialist terminology is not always used appropriately or is absent.
	0	No relevant content.

Possible evaluation:

- Central executive is vague and untestable (despite being the component in overall charge)
- Central executive itself may be divided into separate sub-components
- links with attention research – allocation of resources/divided attention/dual-tasking
- use of evidence to support or contradict the central executive, eg Hunt (1980).

Accept other relevant points.

[4]

Q6.

[AO1 = 4]

Level	Mark	Description
2	3-4	Description of the working memory model is clear and has some detail. The answer is generally coherent with effective use of terminology.
1	1-2	Description of the working memory model is evident but lacks clarity and/or detail. The answer as a whole is not clearly expressed. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- a model of STM which sees this store as non-unitary and an active processor
- description of central executive and 'slave systems' – visuo-spatial scratch/sketch pad; phonological store/loop; articulatory loop/control process; phonological store; episodic buffer (versions vary – not all of slave systems need to be present for full marks)
- information concerning capacity and coding of each store
- allocation of resources/divided attention/dual-task performance.

Students may include a diagram. If this is accurately labelled and sufficiently detailed, this can potentially receive the full **4 marks**.

[4]

Q7.

[AO3 = 3]

3 marks for a clear, coherent and detailed explanation of a limitation, using appropriate terminology.

2 marks for a less detailed explanation of a limitation using some of the detail given below.

1 mark for a muddled or limited explanation of a limitation.

Possible limitations:

- vague, untestable nature of the central executive or episodic buffer
- evidence suggesting the central executive is not unitary, eg EVR had good reasoning skills but was poor at decision-making
- evidence that visuo-spatial scratch pad is not unitary and divided into inner scribe and visual cache
- supported by highly controlled lab studies which may undermine the validity of the model
- doesn't account for musical memory because it's possible to listen to instrumental music without impairing performance on other auditory tasks.

Credit other relevant limitations.

[3]