

7(a)	- It does not have a mechanical structure - It does not have any actuators ... so it cannot move itself
7(b)	Microphone
7(c)	Any four from: For example: - Gather data from the same/different voices // It can ask a user to say lots of different words Analyse/identify patterns in a user's voice - It can adapt its own processes - It can learn to identify a user's voice - Stores successful/unsuccessful voice commands - It can learn different ways of making the same request - It can learn the different pronunciations // It can learn different accents - It can learn by listening to lots of different voices - It can learn to ignore any background/environmental noise if a user is speaking
7(d)	Any two from: - It has a single/limited function - It has dedicated hardware - It has a microprocessor - Its function is not easily changed
7(e)	Any two from: For example: - The music/books can be easily accessed from any smart speaker - The user doesn't need to purchase a secondary storage device for the books/music // Smart speaker doesn't need a large amount of secondary storage - The user doesn't need to maintain the storage needed for the books/music - Smart speaker can be smaller in size (as it doesn't need large amounts of secondary storage) - Almost unlimited storage available for the books/music // Easy to increase storage capacity needed
7(f)(i)	Any two from: - Data could be lost - Data could be gained - Data could be changed - Skewing of data could occur - Interference could occur - Crosstalk could occur - Data collisions could occur - Data packets could time out/reach their hop count
7(f)(ii)	Any two from: - Parity byte check - Parity block check - Checksum - Echo check - ARQ

6(a)	Any three from: - Simulation of intelligent behaviours by computers - Collection of data and rules for using that data - A computer that has the ability to learn - A computer that has the ability to adapt - A computer that has the ability to reason/make decisions
6(b)	Any three from For example: - It could use machine learning - It can collect data about the players actions Analyse/identify patterns in the player's movements ... so it can learn how the player moves ... to help predict the next movement of the player - It can adapt its own movements to match the players // It can adapt its own processes - It can store successful/unsuccessful moves - It will learn the most efficient/optimal movements against a player
6(c)	Two from (one mark for high-level, one mark for matching comparison to low-level) - High-level language is written in English-like statementslow-level language is written using mnemonics/as machine code/in binary - High-level language is easier to read/write/debug low-level language is more difficult to read/write/debug - High-level language is machine independent/portablelow-level language is not machine independent/portable - High-level language cannot directly manipulate the hardware low-level language can directly manipulate the hardware - In high-level language, one line of code can perform multiple actions in low-level language, one line of code performs a single action
6(d)(i)	Interpreter
6(d)(ii)	Compiler
6(d)(iii)	Compiler
6(d)(iv)	Interpreter

6(a)	Any three from: - Collection of data - Rules for data - Ability to reason - Ability to adapt
6(b)	Any three from: Examples Changes its data/rules ... according to feedback/results - If a result does not give a suitable response this is recorded ... next time the result is changed ... to provide more accurate/relevant results in future - Supervised/unsupervised learning

9(a)	One mark for each correct term in the correct order. - artificial - interface - inference engine - knowledge base - rule base - inference engine - interface
9(b)	Machine learning

10(a)	Any one from: - The ability to learn/adapt // machine learning abilities - The collection of data and the rules for using that data - The ability to reason // has problem solving abilities // makes predictions - Simulates intelligent/human behaviour - Analyses patterns
10(b)	Any six from: - It has an interface used to input data/view output - It has a knowledge base - It has a rule base - It has an inference engine - Applies the rule base to/and the knowledge base to provide output/diagnosis/result/solution/decision - Decides what to ask next based on the data input

9(a)	Three from: - Rule base - Knowledge base - Interface
9(b)	Any two from: - It makes decisions ... by applying the <u>rules/logic</u> to the <u>facts/knowledge</u> to provide a result/diagnosis