

# Homework VII - Coming Back Home. (even)

We learned the simple physical principles involved with our brain function and memory development. Principles such as; magnetic memory, electric motors, generators, loudspeakers, transformers, magnetic domains, magnetic fields, holograms, lasers, quantum consciousness, and the video Future Fantastic. It's easy to cut and paste. Answer the questions in your own words. I want to see you in your answer.

Required questions are denoted by (\*)

1) How does a motor work? Briefly explain the steps in turning a motor's rotor. \*

(each answer is worth 5 points)

2) How is a current-carrying coil of wire like a bar magnet? \*

3) A generator is different from a motor because \*

(there is more than one answer.)

- a. a generator uses a reverse magnetic field.
- b. a generator produces electricity.
- c. a generator produces mechanical work.
- d. a generator is smaller and less complicated.
- e. the current goes in the opposite direction in a generator.
- f. a generator uses mechanical work to produce electricity.
- g. a generator uses electricity to produce mechanical work.

4) In Future Fanatastic, there were two methods used to develop memory and using it. They showed the chasing mice to demonstrate one method to develop memory. The other method mentioned was the computerized chess champion Big Blue. What are these two methods. \*

- a. Input-Output methods
- b. Top-down/Bottom-up methods
- c. magnetic and holographic methods
- d. biomagnetic and electromagnetic methods
- e. none of these

5) In your own words, briefly explain how a loudspeaker works. \*

6) In class, I placed the coil of wire with the connected light bulb on top of the Thomson Ring demo apparatus, why did the

light bulb light-up? \*

7) A hologram is created \*

- a. using a laser, mirrors, holographic paper and the electromagnetic induction concept.
- b. using any light, mirrors, object, holographic film, and the interference of electrons concept
- c. using a laser, mirrors, object, holographic film, and the interference of light concept.
- d. using a laser, object, any film, and the electromagnetic induction concept.
- e. utilizing the interference of light concept and the electromagnetic induction concept.

8) Download the game of life. Play with it. What are the rules? Why does 'life' seem to be evident? Bryson mentions complexity as being both natural and simple, why? Which characters in the game of life lived the longest? \*

9) Briefly, summarize the Quantum Consciousness slide show. \*

10) Some scientists thought that neurons were the most fundamental aspect of consciousness. After watching and reading the QC slide show, why would you disagree? \*

11) Your Name. \*

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