**[PLEASE NOTE THAT THESE ARE JUST SOME EXAMPLE OF POTENTIAL QUESTIONS]**

**CHAPTER 1**

1. Why Galvani is important in neuroscience?
2. Tell me something about the debate between Golgi and Ramon Y Cajal
3. EEG and ERPS: what is the main difference?
4. Can you describe some ‘brain stimulation’ techniques?
5. You need to assess whether your patient use the right hemisphere for language: why kind of techniques would you use to reach this goal?

**CHAPTER 2**

*If I have the impression that you don’t remember the localization of one particular area, I can share my screen, show a picture of the nervous system and ask you to localize this area in the picture.*

**CHAPTER 3**

1. Describe the cell body of a neuron
2. Ion channels and ion pumps
3. Describe an action potential
4. Difference between gap junctions and chemical synapses
5. Spatial and temporal summation in neural activity

**CHAPTER 4**

1. How can I inhibit a neuron ?
2. If I provide my patient an agonist of GABA receptor, will he/she be more/less active?
3. A new patient comes to your office: he is used to get a drug that prevent the reuptake of serotonin, can you guess his general mood in the absence of drug?
4. “D*octor, can you tell me why when I am drunk I become aggressive and then I don’t remember what I have done that night?”*
5. If I develop a drug that interfere with the release of dopamine from the vescicles, do I produce something that will have similar/dissimilar effect of cocaine in my patient?

**CHAPTER 5**

1. Transcription and translation of DNA
2. What is crossing over?
3. Which are the different steps of brain development?
4. Which phenotypes typically correspond more to Fragile-X syndrome? (3 pictures)
5. If this patient enters the room, what’s your initial diagnosis? (e.g., picture of Down syndrome)

**CHAPTER 7**

1. Can you tell me how auditory information reach the brain?
2. Describe me the sense of touch
3. Describe me how olfactory information reach the brain
4. How does it work ‘gustation’?
5. Why, when you continuously move toward right (e.g., in a park ride) and then stop yourself, you have the odd fleeting sensation that your head is moving toward left (even though you are completely still)?

**CHAPTER 10**

1. If your patient has this cariotype, is he/she ‘normal’ or do you think this is weird in terms of chromosome composition?
2. If your patient has this cariotype, can you guess which is the phenotype? (3 pictures)
3. Tell me something about sexual orientation
4. Which are the main differences in the brain between males and females?
5. Sexual disfunctions

**CHAPTER 11**

1. “Doctor, this is my hypnogram: do you think this is normal?”
2. “Doctor, I have 20 years and I sleep 14 hours each day, am I normal?”
3. “Doctor, they told me I suffer onset insomnia! I don’t know what to do for sleeping, I usually spend 3 consecutive hours using the laptop in order to become tired, then I switch off and I notice I cannot start to sleep, why?”
4. Why do we sleep? Functions of sleep
5. Doctor, I have hurt by wife while sleeping, she said I was acting like I was chased by police: which kind of disorder may I have?

**CHAPTER 12**

1. If I reduce calcium entrance in the sensory neuron of syphon Aplysia, what should I observe in terms of non-associative learning?
2. What does in happen during sensitization in terms of neurotrasmitters and axon terminals?
3. Tell me something about the famous case of patient H.M.
4. Describe me long-term potentiation
5. Your patient must remove part of the prefrontal cortex because of tumor, can you predict a couple of cognitive disorders he might have?

**CHAPTER 13**

1. If I ask a split brain patient to tell me what the see on the screen (I show a picture), which is the most likely response?
2. What is WADA test?
3. If I present two songs by dichotic listening to musicians, which one do they notice more? And what about doing the same test with experts in mathematics?
4. If your patient speaks fluently but does not seem to understand properly to your questions, what could it be?
5. The parents of one of your young patients (15 y.o.) are worried because he suffers dyslexia. What could you tell him to explain what he has and his potential possibilities in the life?

**CHAPTER 14**

1. “*Doctor, I saw a snake and I notice than my body reacted somehow, I asked myself what were the causes of these physiological changes and I concluded I was scared*”. This process looks similar to the one advanced in one theory of emotions.. Which one? What about the other two?
2. Neuroanatomical correlates of some emotional states
3. In the last weeks you studied harder for this exams (*I hope*), maybe you did not sleep either! Can you tell me which processes activated your hypothalamus to face this demanding task for such a prolonged period?
4. Cranial nerves important for facial expressions?
5. How can I increase aggression in an animal model?