**Mid-Term Assignment (Spring-20) (DPT 6th Semester)**

**Course Title: Physical Agents and Electrotherapy-ll Instructor: Dr. Maria Feroze**

**Time: 48 hours Max Marks: 30**

**Note:**

* **You can use Google/ Google Scholar as a source of help but refrain from copy pasting the data directly from these sources.**
* **More than 25% plagiarism in your answer will not be acceptable.**
* **Attempt all questions from this section, all questions carry equal marks.**

Afifa Muslim

I'd # 6999

Q1. Write in your own words:

1. What is the difference between 1 g of ice at 0°C and 1 g of water at 37°C?

.Ans:-Energy moves from higher potential to the lower it's mean from body heat to the ice .

So there for in 1g of ice at 0°C heat doesn't loss and in 1g of water at 37°c heat losses.

If we take cold water 0° to 37° it loss energy 491J .so we prefer ice instead of cold water.

1. Explain why the rate of conduction of nerve fibers in a mixed (motor and sensory) peripheral nerve is reduced by cooling.

Ans:- skin contain primary thermal receptor .cold receptor is more time numerous than hot receptors.

When we apply ice therapy so this ice slowdown or reduce the conduction .

1. Why is Cryotherapy contraindicated in cardiac patients?

Ans:- Ice cause vasocontraction so in vasoconstriction Bp is increased.Blood moves from higher pressure.so this pressure cause load on the heart so this load increased heart problems because blood move from higher pressure.

1. Write in detail the uses of ice cube massage?

Ans:- Ice cube massage:-

For the relieving of pain ice block move from painful area .

1) counter irritant

2) muscle stimulation

Circular massage not put on one place for neurological facilitation the ice should b apply at that area with short period of time .

Uses of ice cube massage:-

\* Reduce dark circles

\* Reduce wrinkle

\* Removed facial hair

\* Improve blood circulation

\* Cleaness skin pores

\* Increased mobality

\* Reduce pain

\* Can help in remove of acne.

Q2. Explain how Cryotherapy reduces:

1. Pain

In pain 1st of all we apply cooling to that part . sensory signals goes to the spinal cord to activate the nerve .fibers are in large daimeter. Large diameter is much faster than small diameter . cooling have large daimeter nerve fiber and pain have small daimeter nerve fiber.so cooling large daimeter nerve fiber is to stop small daimeter of nerve fiber.we are providing them strengthening exercises and other different type of exercises.

1. Spasticity

When we apply ice the upper motor neuron lesion so in start it's very fast .signals goes fastly toward the anterior horn and anterior horn increase motor neuron and than motor neuron fires spontaneously to increase the muscle tone.and then it's slow down the neuron lesions.

Q3. A) Differentiate between luminous and non-luminous generators. (At least ten differences)

Luminous generator:-

1) luminous have their own sources.

2) Electrical heated filament e.g lamp

3) luminous wavelength is 350-400 nm

4) luminous pentrate dermis epidermis and subcutaneous tissue

5) luminous is use in chronic inflammation

6) luminous reduce pain vai counter irritant effect

7) luminous treated time is 15to 20mint

8) luminous time from treated area is is 40to60

9) luminous have yellow flame it's because when the air holes is closed .

10) luminous flame is easily to see

11 ) luminous is not sutiable for heat

12) luminous is quiet large and wavy swayed by wind

Non luminous:-

1) Non luminous have not their own sources

2)non luminous doesn't cause the sensation of light

3) non luminous is blue or pale blue in colour and it's much hotter than luminous flame.

4) non luminous is much more effective than luminous

5) non luminous have blue flame it is because of when the air holes is open

6) non luminous flame is difficult to see

7) non luminous is sutiable for heat

8) non luminous is noisy ,steady,nad small

9) non luminous is electricaly heated resistance wire coiled

10) wavelength of non luminous is 1500-1200nm

11) non luminous pentrate epidermis and superficial dermise

12) uses of non luminous is acute inflammation

13) non luminous reduce pain vai sedative effect

14) treatment time is 20-30 and distance is 75-90cm for treated area.

1. Are infra-red rays more effective in relieving the pain than Ultraviolet (UV) light or not? Give evidence to support you answer
2. .Ans:- infra red is more effective in relieving the pain than uv ray because infra red have high wavelength and short energy as compared to the uv ray which have high energy and short wave length .

Infrared is use for chronic and acute pain treatment . infrared is use for painless therapy.infrared is used for many different field of medicine.if patient have an acute or chronic pain than infra red is the best option to give that therapy to the patient.infrared therapy is used in the wave length of light those light are only dilever to the sites of the injury in the body while ultra voilet therapy which are damaging effect on the cells and tissue of the body .infra red repair the cells and ultraviolet are damaging the cell.infrared is improving the blood and oxygen level.

Infra red is using to repair the woun healing of tissues and is also use for pain relieving.infra red have the ability to pentrate the skin belower layer while uv haven't the ability to pentrate because the uv have short diameter as compared to infrared.infrared show health benefits to reduced inflammation and pain relieving .there are many studies which show that infra red is the best therapy than other .infra red can reach the bones and muscles as well as nerve.tecnology allowed the people the benefits of the sunsit to harness without being exposed the harmfullness of ultra voilet ray .it's a fact that infra red is safe as compared to uv infrared is use in infant children .infrared is used to increase the blood circulation in different part of the body which make it possible to give oxygen and nutrition the other part of the body infrared is used to repair the tissues imjury and is also help to relieving the pain and reduce inflammation as compared to uv which can adversly effect to the Bone and muscles.infrared is use in low back pain, RA , Diabetic neuropathy , TMJ, scitica etc

It's free drug using and relieving the pain for along lasting time pain relieving by uv is a chronic pain patient when that patient use uv rays the take a greater short time to relife the pain for short interval of time after comparing the uv exposure and non uv exposure.uv is much more harmful for immune system.uv destroyed the microbes which are present in the body like bacteria and viruses .uv destroyed the immune system that immune system defence the body from harmful substance .uv also pentrate the cellmembrane to damge the DNA and stop the reproductions.

https://www.news-medical.net/amp/health/How-Does-Infrared-Therapy-Work.aspx

https://www.sciencelearn.org.nz/resources/1304-positive-and-negative-effects-of-uv

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3427189/#!po=78.1481