A – radiating energy will become 4 times because the law of I1/d2
Where: I = Intensity, d = Distance between the source and the point of calculation
So, to double the distance from an infrared source decreases the intensity to (1/2)2 = 1/4 of its original value.
This is, of course, only strictly true if there is halving the distance will quadruple the intensity.

14-T.E.N.S frequency :
a- 10 -70 HZ
b- 12 -20HZ
c- 5 - 50Hz
d- 1 - 250 Hz

the correct Answer is :
D- 1 – 250 Hz , the rate of delivery of these pulses (the pulse frequency) will normally be variable from about 1 or 2 pulses per second (pps) up to 200 or 250 pps

12-When using ultrasound in treating chronic bursitis of hip, the most benefit might occur if the ultrasound frequency and dosage were:

A. 1 MHz and 1.5 Watts/cm2
B. 1 MHz and 0.5 Watts/cm2
C. 3 MHz and 1.5 Watts/cm2
D. 3 MHz and 0.5 Watts/cm2

The correct answer is :
A-1 MHz to reach in deep tissue & 1.5 Watts /*cm2 which is an adequate intensity for bursitis in hip region , so the choice is 1 MHz and 1.5 Watts/cm2*

15-when you apply TENS for a patient and you find sever pain, what would you do
A -Decrease frequency
B-Increase wave length
C-Decrease pulse width
D-Switch off device

The correct Answer is :
D – switch off device

16 -TENS stimulation
A -Presynaptic inhibition
B -Presynaptic excitation
C -Post synaptic inhibition
D -Post synaptic excitation

The correct answer is :
A- presynaptic inhibition , TENS unit reduces pain through nociceptive inhibition at the presynaptic level in the dorsal horn, thus limiting its central transmission. The electrical stimuli on the skin preferentially activate low-threshold, myelinated nerve fibers. The afferent input from these fibers inhibits propagation of nociception carried in the small un-myelinated C fibers by blocking transmission along these fibers to the target or T cells located in the substantia gelatinosa (laminae 2 and 3) of the dorsal horn .

17-when treating chronic pain which type of TENS used :
a- brief
b- conventional
c- burst
d- acupuncture

The correct answer is :
D- acupuncture like a tens ,

In acute stage we use : convential or high frequency
In sub acute stage we use : burst
In chronic stage we use : low frequency (acupuncture)

18-pat has chronic brachialgia the best tense use :
a-conventional
b-low frequency
c-burst
d-intense

The correct answer is :
B – Low frequency , described as above

itching. These signs and symptoms resolve three days later (a total of 4 days after treatment). What dosage did the patient receive?

a- Sub-erythemal dose
b- Minimal erythemal dose.
c- First-degree erythemal dose.
d- Third-degree erythemal dose.

The correct Answer is:
C-first degree Erythemal dose

Table 3. Standard doses of ultra-violet (E1–E4) classified by erythema reaction

Dose	Latent period (hours)	Appearance	Pigmentation	Desquamation
E1	Up to 12	Slightly pink	Nil	Nil
E2	4–6	Red	Slight	Powdery
E3	1–4	Fiery, red & painful	Marked	In sheets
E4	As E3 but with the formation of blisters			

43– pt has infected lumber wound use
a) Ultra Voilet
b) U/S
c) TENS
d) faradic

The Correct Answer is:
A- ultra violet used for infected wound and with chronic wound we use HVPC

44- Patient with groin pain 2 weeks ago used :
a- cold + interferential
b- hot + interferential
c- pulsed US + interferential
d- *continue US + interferential*

The correct Answer is :
D-continue US+Interferential due to after 2 weeks ago it`s mean that it`s chronic so we use Us continues waves to make a thermal effect used for treatment chronic deep pain.

45- pt has pain due to deep ms strain we use :
a) Pulsed U/S 1MHZ
b) ,, ,, 3MHZ