Which of the following best describes a control zone?

The output of a dimmable ballast

Building areas directly adjacent to vertical fenestration

A lamp or group of lamps controlled simultaneously by a controller X

None of the above

Generally, dimmable electronic ballasts designed to operate three or four linear lamps can be remote-mounted or tandem-mounted, as long as the ballast is rated for this. The same holds true for compact fluorescent lamp ballasts.

True

False X

While the lamps and ballasts must be compatible, a dimmable ballast can operate with any controller regardless of dimming method.

True X

False

While the lamps and ballasts must be compatible, a dimmable ballast can operate with any controller regardless of dimming method.

True

Dimmable electronic ballasts for linear lamps that have a dimming range of 100% to 5-10% are typically categorized as \_\_\_\_\_ ballasts, while ballasts that have a dimming range of 100% to 1% are typically categorized as \_\_\_\_\_ ballasts.

Energy management ; architectural dimming XXXXXXXXX

Architectural dimming ; energy management

Energy monitoring ; load-shedding

None of the above

Throughout the entire dimming range, most dimmable electronic ballasts operate with a linear relationship between:

Dimming level and light output XXXXXXXXX

Dimming level and power draw

All of the above

None of the above

Which of the following is NOT an advantage of continuous dimming as compared to bi-level or multi-level switching?

Smooth continuous reduction in light levels over wide range

Greater flexibility

Reduced commissioning X

Greater possibility of user acceptance

As lamps are dimmed, light output decreases but the human eye overcompensates for diminished light level by allowing more light to enter the pupil. For example, dimming to 25% appears to be about \_\_\_\_\_ of the original light level.

15%

25%

40%

50% X

Dimming can increase lamp life among \_\_\_\_\_.

Fluorescent lamps

Incandescent lamps X

HID lamps

None of the above

Reducing light levels at night in spaces with non-critical tasks, based on research that people prefer and need less light at night than during the daytime, is a strategy called \_\_\_\_\_.

Daylight harvesting

Task tuning

Scheduling

Adaptive compensation X

Though linear with power, light output is not proportional to power except during part of the range. Generally, efficacy \_\_\_\_\_ as lamps are dimmed using analog dimming ballasts.

Remains constant

Increases

Decreases X

For every 10°C increase in the case temperature of a dimmable ballast operating linear lamps, ballast life can be expected to be reduced by \_\_\_\_\_. Conversely, reducing ballast case temperature will increase ballast life. For every 10°C reduction in ballast case temperature, ballast life can be expected to \_\_\_\_\_.

5,000 hours ; increase by 5,000 hours

One-third ; increase

One-half ; double X

10,000 hours ; double

The National Electrical Manufacturers Association (NEMA) recommends that linear T8 fluorescent lamps be operated at full light output \_\_\_\_\_ prior to any dimming. This is called “lamp seasoning.”

Overnight, or about 12 hours X

For 50 hours

For 60 hours

For 100 hours

\_\_\_\_\_ is most effective when individual user or space visual needs are more important than energy savings, while \_\_\_\_\_ is most effective when utility cost savings are more important than visual needs.

Automated dimming ; manual dimming

Manual dimming ; automated dimming X

Load shedding ; task tuning

None of the above

Which of the following is recommended for good dimming performance?

Mix different loads on a dimmer, such as incandescent with magnetic or fluorescent ballasts

Install non-dimmable linear and compact fluorescent ballasts on a circuit controlled by a dimmer

Because linear and compact fluorescent lamps have different dimming ranges, mix them in the same dimming control zone

Specify ballasts that are rated by the manufacturer as compatible with control devices that use the same dimming method (e.g., 0-10VDC, two-wire, etc.) X

Dimmable electronic ballasts designed to operate one or two linear lamps can be remote-mounted or tandem-wired, as long as the ballast is rated for this.

True X

False

Which of the following is NOT a potential benefit of dimming linear fluorescent lamps?

Change light levels without disruption to operations

Increase lamp life X

Reduce utility costs

All of the above

If the owner wants to attempt to increase worker satisfaction using lighting controls, which strategy is most suitable?

Daylight harvesting

Manual dimming controls X

Load shedding

Scheduling