Please first write your name and social security number (as identification number) on the answer sheet.

This exam consists of 100 statements which are either correct or wrong. For each statement, find the corresponding number on the answer sheet. If the statement is correct, fill in the circle A with a No. 2 pencil. If not, fill in the circle B.

• To take a picture with a camera, one must have a lens to produce
  (1) a real image. +
  (2) a real or virtual image. −

• To get a large depth of field, one should have
  (3) a small lens opening (stop). +
  (4) a short distance from the object for which the photo is taken. −
  (5) a small focal length lens. +

• A lens with small focal length will produce
  (6) a large picture on the film. −
  (7) is good for taking picture of a near-by object. +

• Compared with a standard lens, a telephoto lens
  (8) has a long focal length. +
  (9) has a wider field of view. −
  (10) magnifies the image more. +
  (11) has a smaller depth of field. +

• Light intensity on a film
  (12) increases by a factor of 4 when the focal length is increased by a factor of 2. −
  (13) increases by a factor of 4 when the focal length is decreased by a factor of 2. +
  (14) increases by a factor of 4 when the diameter of the stop’s hole is increased by a factor of 2. +
  (15) increases by a factor of 4 when the diameter of the stop’s hole is decreased by a factor of 2. −
  (16) depends on the f-number only. +

• Which of the following pairs of f-stops and shutter speeds provide nearly the same exposure as f5.6 at 1/250 second?
  (17) f4 at 1/125 sec. −
  (18) f4 at 1/500 sec. +
  (19) f7.8 at 1/125 sec. +
  (20) f7.8 at 1/500 sec. −

• A film with a quick initial rise in its H & D curve is good for
  (21) photographing in a situation where there is very little light. +
  (22) photographing in a situation where there is very large variation of the light level. −
(23) photographing in a situation where you want to enhance small differences in light level. −

- The latitude of a film is determined by the following properties in an H & D curve
  (24) the steepness of the curve. −
  (25) the exposure where the initial rising in the density of the developed silver grains occurs. −
  (26) the exposure where the density of the developed silver grains reaches saturation. +

- The images on the retina are formed by
  (27) the eye-lens only. −
  (28) the cornea only. −
  (29) both the eye-lens and cornea. +

- Accommodation refers to
  (30) changing the shape of the eye-lens to focus on a particular distance. +
  (31) the motion of the eyeballs to receive light from the right direction. −
  (32) the operation to cure cataract. −

- Rods in the retina
  (33) are used to see colors. −
  (34) outnumber the cones. +
  (35) distribute mostly around the fovea. −

- Cones in the retina
  (36) are very sensitive to light. −
  (37) function like color films in a camera. +

- Fovea is
  (38) in the middle of the retina. +
  (39) what you use the most when you read a book. +
  (40) mostly used in the night vision. −

- Latency refers to
  (41) the time lag for the cells in the retina to respond to a flash of light. +
  (42) still seeing the light even after it disappears. −

- When the eye muscle relaxes,
  (43) a normal eye can see as far as infinity. +
  (44) a normal eye can see as close as 25cm. +

- A normal eye has the focusing power approximately ranging from
  (45) 58D to 64D. −
  (46) 60D to 64D. +
  (47) 60D to 66D. −

- Myopia refers to a condition in which
  (48) the focusing power of the eye-lens is too strong. +
  (49) the focusing power of the eye-lens is too weak. −
  (50) the image is in the front of the retina. +
  (51) the image is in the back of the retina. −
• If when relaxed, someone has a focusing power of 61D, the far point that person sees is
  (52) 10m. –
  (53) 1m. +
  (54) 25cm. –

• If an eye has the focusing power ranging from 61-63D, it is
  (55) far sighted only. –
  (56) near sighted only. –
  (57) presbyopic. +

• The correct way to use a magnifying glass is to hold it
  (58) at arm’s length. –
  (59) next to your eye. +

• If the focal length of a lens is 5 cm, its magnifying power is
  (60) 25X. –
  (61) 15X. –

• If the focal length of a lens is 5 cm, when you use it as a magnifying glass, you can see an object
  (62) 20 cm away. –
  (63) 5 cm away. +

• In a microscope, the magnification power is determined by
  (64) the eyepiece only. –
  (65) the objective lens only. –
  (66) both the eyepiece and objective lenses. +

• In a telescope the image is located on
  (67) the focal plane of the objective lens. +
  (68) the focal plane of the eyepiece. +

• A Galilean telescope is different from a normal telescope because
  (69) the eyepiece is a converging lens. –
  (70) it has an upright image. +

• If the objective piece of a telescope has a focal length 50cm and the eyepiece focal length 5cm, the magnification of the telescope is
  (71) 10X. +
  (72) 55X. –

• Brightness refers to
  (73) the intensity of a light source. +
  (74) the reflection from a surface. –

• Lightness constancy refers to
  (75) Weber’s law. –
  (76) the white color remains white under different lighting conditions. +
  (77) the sun is lit the same way during day and night. –

• According to Weber’s law
(78) 10, 20, 30, 40, ... are equal steps. − 
(79) 1, 10, 100, 1000, ... are equal steps. + 
(80) 2, 4, 8, 16, ... are equal steps. + 

• The lateral inhibition leads to the fact that 
  (81) a constant illumination is ignored. + 
  (82) a change of the lightness is ignored. − 

• If you stare at a black horse for a long time, and then look at a white screen, you see 
  (83) nothing. − 
  (84) a white horse. + 
  (85) a black horse. − 

• The following devices use the effects of positive afterimages 
  (86) stereoscope. − 
  (87) TV. + 
  (88) personal defense weapons. + 
  (89) movie. + 

• The negative afterimage effect is used in 
  (90) TV. − 
  (91) personal defense weapons. + 

• Binocular view is good for 
  (92) increasing the field of view. + 
  (93) focusing. − 
  (94) perception of 3D. + 

• The simultaneous lightness contrast refers to that 
  (95) there is positive afterimage. − 
  (96) lightness is affected by the neighboring region. + 
  (97) the same gray area appears darker when surrounded by white color. + 

• To create a 3D feeling in a 2D painting, artists use the effects of 
  (98) shadow. + 
  (99) edge. − 
  (100) relative sizes. +