VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM
(Deemed to be University)

B.Sc OPTOMETRY DEGREE EXAMINATION – August 2019
Second Year

STATISTICS AND OCCUPATIONAL OPTOMETRY

Time: Three hours   Maximum: 80 marks

Use Separate answer books for Part A and Part B
PART – A - STATISTICS

Time: One and half an hour   Maximum: 40 marks

SECTION – A

I. Answer ALL Questions: (5 x 1 = 5)

1. An epidemic that becomes unusually widespread and even global in its reach is referred to as a _____
2. Correlation values are not greater than _____
3. The standard deviation is the square root of the _____
4. SPSS stands for statistical package for the _____ sciences.
5. ANOVA stands for _____

II. Match the following: (5 x 1 = 5)

1. Mean – covers time, place and person
2. T test – prospective study
3. Glaucoma – Normal distribution
4. Cohort – Central tendency
5. Descriptive epidemiology – Population based screening

SECTION – B

II. Write short notes on any **TWO** of the following: (2 x 5 = 10)

1. Given the data set : 62, 65, 68, 70, 72, 74, 76, 78, 80, 82, 96, 101
   Find
   a. The medican
   b. The first quartile
   c. The third quartile
   d. The interquartile range (IQR)

2. What is the difference between histogram and bar graph? Illustrate with example also.
3. Types of bias.
4. What is Chi square test performed for?

(p.t.o)

SECTION – C

III. Write an essay on any **TWO** of the following: (2 x 10 = 20)

1. Prepare a questionnaire for computer vision syndrome.
2. Write on RCT and survival analysis.
3. Given below is the Frequency Distribution (10mcg/ dL Intervals) of Blood Lead Levels – Rural village, 1996. Calculate the mean, standard deviation and variance for the given data.

Blood Lead Level (g/ dL)	Frequency
0-9	0
10-19	1
20-29	2
30-39	3
40-49	6
50-59	8
60-69	6
70-79	9
80-89	2
90-99	0
100-110	2
Total	**39**

4. Types of prevention.

PART – B – OCCUPATIONAL OPTOMETRY

Time: One and half an hour   Maximum: 40 marks

SECTION - A

I. Answer All questions: (5 x 1 = 5)

1. According to Grundy, the visual acuity necessary for a demanding task should be approximately _____ the minimum value
   a. Thrice
   b. Four times
   c. Once
   d. Twice

2. A person is unable to play the guitar as he has lost his forefinger. This is
   a. Impairment
   b. Disability
   c. Handicap
   d. None of the above

(p.t.o)

3. Maltworker's lung is because of
   a. Germinating barely
   b. Mushroom
   c. Asbestos
   d. Grape mould

4. What is the mathematical formula to calculate visual acuity required based on detail of the object size of the job?

   a. Tan visual angle = size of critical detail / working distance
   b. Using graphical method
   c. Cos visual angle = size of critical detail/ working distance
   d. 31278/ max. height of object in regard

5. All Opthalmic surgical LASER are of

   a. Class 1
   b. Class 2
   c. Class 3
   d. Class 4

II. State whether the following statements are **TRUE** or **FALSE**:   (5 x 1 = 5)

   1. Hazard is directly proportional to Toxicity*Exposure
   2. Sunglasses that offer protection from blue light are tinted ornage, yellow or amber.
   3. Cup type goggles have good peripheral vision.
   4. A triangle indicates that an order is in force.
   5. The task to background illuminance ratio should not be less than 5:1.

III. Fill in the blanks: (5 x 1 = 5)

   1. The luminous flux is measured in _____.
   2. A VDU generally has _____ characters per line.
   3. Oscillating electric circuits are _____waves.
   4. _____ LASER is an occupational hazard.
   5. _____ movements are required for the job wherein the target speeds of above 60 degree per second is achieved.

SECTION - B

IV. Answer any **THREE** of the following: (3 x 5 = 15)

   1. How will you prevent occupational eye disease?
   2. Write on PPE.
   3. Electromagnetic radiation.
   4. Causes of accidents and accident prevention.
   5. Colour vision defects and methods of colour vision testing.

SECTION - C

V. Discuss in detail on any **ONE** of the following questions: (1 x 10 = 10)

1. Enumerate the checklist for visual task analysis.
2. Write on
   a. Factories Act
   b. ILO
   c. National Institute of Occupational Health
   d. National Safety Council

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