**Integral University, Lucknow**
**Department of Mathematics**
**Second Mid Semester Test- 2019-2020 (Even Semester)**

**Course: BCA**
**Name of Subject:** Mathematics-II
**Subject Code:** MT 114
**Year/Semester :** I/II

Q.1. The order of a partial differential equation is defined as:

(a) order of the lowest degree derivative

(b) order of the highest degree derivative

(c) Total numbers of terms in the equation

(d) None of the above

Q.2. In order to find Auxiliary equation, the correct replacement is:

(a) D=1, D'=m

(b) D=1, D'=$m^2$

(c) D=m, D'=1

(d) None of the above

Q.3. If the roots of the Auxiliary equation are real and distinct, then C.F. is given by

(a) $f_1(y+m_1x) - f_2(y+m_2x)$

(b) $f_1(y+m_1x) + f_2(y+m_2x)$

(c) $f_1(y+m_1x) - xf_2(y+m_2x)$

(d) $f_1(y+m_1x) + xf_2(y+m_2x)$

Q.4 The equation $4\frac{\partial^2 u}{\partial x^2}+4\frac{\partial^2 u}{\partial x \partial y}+\frac{\partial^2 u}{\partial y^2}=0$ is

(a) Hyperbolic

(b) Elliptic

(c) Parabolic

(d) Both Elliptic and Hyperbolic

Q.5. A partial differential equation is said to be Hyperbolic if

(a) $B^2$-4AC=0

(b) $B^2$-4AC<0

(c) $B^2$-4AC > 0

(d) $B^2$=4AC

Q.6. The complete solution a second order partial differential equation with constant coefficient is given by

(a) z=(C.F)(P.I)

(b) z=(C.F)-(P.I)

(c) z=(C.F)+(P.I)

(d) z=$\frac{(C.F)}{(P.I)}$

7. Any subset of a sample space is called
(a)Trial (b) Event
(c)Random experiment (d)none

8. A card is drawn from a pack of 52 cards. The probability of getting a king is
(a) $4/52$ (b)$1/52$
(c) $13/52$ (d)$26/52$

Q.9. If the mean is 11 and the median is 13, then value of mode is:
(a). 15
(b). 13
(c). 11
(d). 17

Q.10 If the mean of 20 values is 10, then sum of these 20 values is:
(a). 10
(b). 20
(c). 200
(d). 20+10

Q.11. We must arrange the data before calculating in:
(a). Mean
(b). Median
(c). Mode

(d). All above

Q.12. A measurement that corresponds to largest frequency in a set of data is called:
(a). Mean
(b). Median
(c). Mode
(d). None
Q.13. Mode of the series 0,0,0,2,2,3,3,8,10 is:
(a). 0
(b). 2
(c). 3
(d). No mode
Q.14. The measure of central tendency listed below is:
(a). Mean
(b). The Range
(c). Standard deviation
(d). Regression lines

Q.15. Standard deviation is also called:
(a). Root-Mode square deviation
(b). Root-Mean square deviation
(c). Root-Median square deviation
(d). None

Q.16. Square of standard deviation is called:
(a). Range
(b). Variance
(c). Mean
(d). Median

Q.17. If the mean is 10 and coefficient of variation is 5, then the standard deviation is
(a). 10
(b). 50
(c). 5
(d). 2

Q18: If the regression equation is $Y = a + bX$, then $X$ is called

a. Dependent variable
b. Independent variable

c. Continuous variable
d. None of the above

Q19: If the regression equation is $Y = a + bX$, then $Y$ is called

a. Dependent variable
b. Independent variable
c. Continuous variable
d. None of the above

Q20: The correlation coefficient is the _____ of two regression coefficients

a. Arithmetic mean
b. Geometric mean
c. Harmonic mean
d. Median

Q21: If one of the regression coefficient $b_{yx}$ is positive, then $b_{xy}$ will be

a. Positive
b. Negative
c. Zero
d. One

Q22: The value of the coefficient of correlation "$r$" lies between

a. -1 to 0
b. 0 to 1
c. -1 to 1
d. -2 to 2

Q23: If $Y = -3X$ and $X = -12Y$, then correlation coefficient "$r$" is equal to

a. 36
b. -36
c. -6
d. 6

Q24: If $b_{xy} = -1$ and $b_{yx} = -1$, then correlation coefficient "$r$" is equal to

a. 1
b. -1
c. 0

d. None

Q25: If correlation coefficient $r = 1$ and $b_{xy} = 2$, then $b_{yx}$ is equal to

a. 1
b. 2
c. ½
d. 0