

MATHEMATICS PAPER-II

TIME ALLOWED: 30 Minutes

GROUP-I

OBJECTIVE

MAXIMUM MARKS: 20

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

- (1) The solution of differential equation $\frac{dy}{dx} = \sec^2 x$ is:-
 (A) $y = \cos x$ (B) $y = \sec x$ (C) $y = \operatorname{cosec}^2 x$ (D) $y = \tan x$
- (2) $\int_0^2 dx$ equals:- (A) 2 (B) 0 (C) 4 (D) -2
- (3) $\int_0^{\frac{1}{2}} \frac{dx}{\sqrt{1-x^2}}$ is equal to:- (A) $\frac{\pi}{4}$ (B) $\frac{\pi}{2}$ (C) $\frac{\pi}{3}$ (D) $\frac{\pi}{6}$
- (4) The distance between (1, 2) and (2, 1) is:- (A) 1 (B) 2 (C) $\sqrt{2}$ (D) 0
- (5) Intercept form of equation of line is:-
 (A) $\frac{x}{a} + \frac{y}{b} = c$ (B) $\frac{x}{a} + \frac{y}{b} = 1$ (C) $\frac{a}{x} + \frac{b}{y} = c$ (D) $\frac{x}{a} - \frac{y}{b} = 0$
- (6) The associated equation of inequality $x + 2y < 6$ is:-
 (A) $x + 2y = 6$ (B) $x - 2y = 6$ (C) $x + 2y = -6$ (D) $x - 2y = -6$
- (7) The centre of circle $x^2 + y^2 + 12x - 10y = 0$ is:-
 (A) (6, 5) (B) (-6, 5) (C) (5, 6) (D) (6, -5)
- (8) The end points of the major axis of the ellipse are called its:-
 (A) Focii (B) Vertices (C) Covertices (D) Directrix
- (9) The unit vector of $2i + j$ is:-
 (A) $2i - j$ (B) $\frac{2i + j}{5}$ (C) $\frac{2i + j}{3}$ (D) $\frac{2i + j}{\sqrt{5}}$
- (10) If the vectors $2i + 4j - 7k$ and $2i + 6j + xk$ are perpendicular, then x equals:-
 (A) 5 (B) 4 (C) -4 (D) 2
- (11) $\lim_{x \rightarrow 0} \frac{\sin x^\circ}{x}$ equals:- (A) $\frac{\pi}{180}$ (B) $\frac{180}{\pi}$ (C) 180π (D) 1
- (12) $\operatorname{Cosh}^2 x - \operatorname{Sinh}^2 x$ equals:- (A) 0 (B) -1 (C) 2 (D) 1
- (13) $\frac{d}{dx} a^x$ equals:- (A) $\frac{a^x}{\ln a}$ (B) $\frac{\ln a}{a^x}$ (C) $a^x \ln a$ (D) a^x
- (14) If $y = e^{2x}$ then y_4 equals:- (A) $16e^{2x}$ (B) $8e^{2x}$ (C) $2e^{2x}$ (D) e^{2x}
- (15) $\frac{d}{dx}(\sin hx)$ is equal to:- (A) $-\cos hx$ (B) $\cos hx$ (C) $\tan hx$ (D) $\sec hx$
- (16) $\frac{d}{dx}(\tan x)$ is equal to:- (A) $\operatorname{cosec}^2 x$ (B) $\tan^2 x$ (C) $\sec^2 x$ (D) $\sec x$
- (17) If $f'(c) = 0$ then f has relative max. value at $x = c$ if:-
 (A) $f''(c) > 0$ (B) $f''(c) = 0$ (C) $f''(c) < 0$ (D) $f''(c) \geq 0$
- (18) $\int \frac{dx}{x}$ equals:- (A) x (B) $\ln x$ (C) $\frac{1}{x^2}$ (D) $\frac{2}{x^2}$
- (19) $\int \sec x dx$ equals:-
 (A) $\sec x \tan x$ (B) $\ln(\sec x \tan x)$ (C) $\ln(\sec x + \tan x)$ (D) $\ln(\sec x - \tan x)$
- (20) $\int \frac{dx}{x \ln x}$ equals:- (A) $\ln x$ (B) x (C) $\ln(\ln x)$ (D) $\frac{(\ln x)^2}{2}$