| ENGINEERING MATHEMATICS TEST SERIES<br>GATE 2019 SCHEDULE: MECHANICAL ENGINEERING | | | | | |
|---|---|---|---|---|---|
| **Test Date** | **Test Type** | **Syllabus<br>[ EM- Engineering Mathematics]** | **No. of Question** | **Marks** | **Duration** |
| 30/07/2018 | **EM: Minor Test- 1** | **LINEAR ALGEBRA:** Matrix algebra, systems of linear equations, eigenvalues and eigenvectors.<br>**CALCULUS:** Functions of single variable, limit, continuity and differentiability. | 33 | 50 | 90 min |
| 30/08/2018 | **EM: Minor Test- 2** | **CALCULUS:** Mean value theorems, indeterminate forms; evaluation of definite and improper integrals; double and triple integrals; partial derivatives, total derivative, Taylor series (in one and two variables), maxima and minima, Fourier series; gradient, divergence and curl, vector identities, directional derivatives, line, surface and volume integrals, applications of Gauss, Stokes and Green's theorems. | 33 | 50 | 90 min |
| 29/09/2018 | **EM: Minor Test- 3** | **DIFFERENTIAL EQUATIONS:** First order equations (linear and nonlinear); higher order linear differential equations with constant coefficients; Euler-Cauchy equation; initial and boundary value problems; Laplace transforms; solutions of heat, wave and Laplace's equations. | 33 | 50 | 90 min |
| 30/10/2018 | **EM: Minor Test- 4** | **COMPLEX VARIABLES:** Analytic functions; Cauchy-Riemann equations; Cauchy's integral theorem and integral formula; Taylor and Laurent series.<br>**NUMERICAL METHODS:** Numerical solutions of linear and non-linear algebraic equations; integration by trapezoidal and Simpson's rules; single and multi-step methods for differential equations. | 33 | 50 | 90 min |
| 30/11/2018 | **EM: Minor Test- 5** | **PROBABILITY AND STATISTICS:** Definitions of probability, sampling theorems, conditional probability; mean, median, mode and standard deviation; random variables, binomial, Poisson and normal distributions. | 33 | 50 | 90 min |