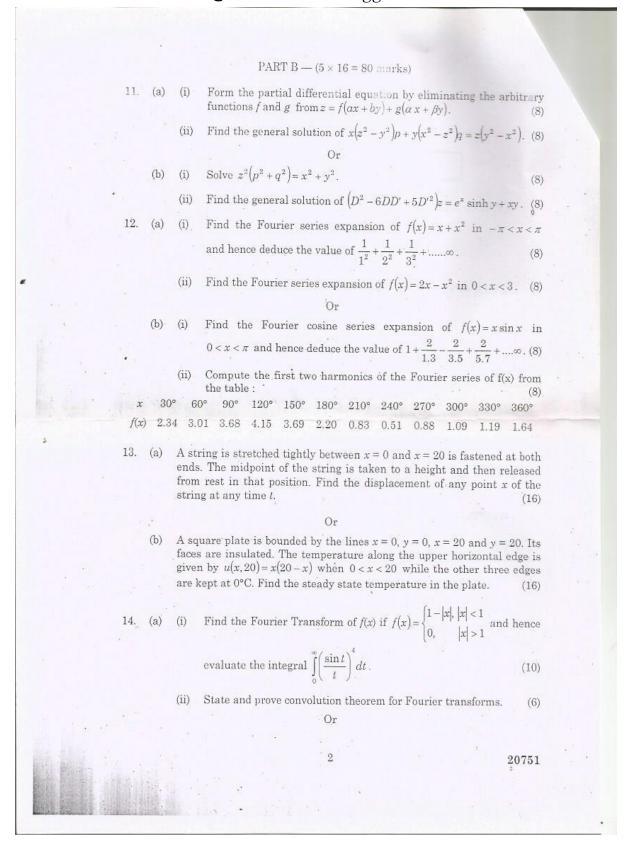
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| Reg. No.: | |
| Question Paper Code: 20751 | * . |
| B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018. | 14 |
| Third Semester | * |
| Civil Engineering | |
| MA 6351 — TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS | |
| (Common to All Branches) | |
| (Regulations 2013) | |
| Time: Three hours Maximum: 100 marks | |
| Answer ALL questions. | |
| PART A — $(10 \times 2 = 20 \text{ marks})$ | |
| Form the partial differential equation by eliminating the arbitrary constants a and b from $z = (x-a)^2 + (y-b)^2 + 1$. | |
| 2. Find the complete integral of $p + q = x + y$. | |
| 3. Write the complex form of Fourier series in the interval $0 < x < 2\pi$. | |
| 4. Find the Root mean square value of the function $f(x) = x - x^2$ in $-1 < x < 1$. | |
| 5. Solve $yu_x + xu_y = 0$ using separation of variables method. | |
| 6. What are the possible solutions of the one dimensional heat flow equation? | |
| 7. State Fourier integral theorem. | E Lant |
| 8. Prove that $F[f(ax)] = \frac{1}{a} F\left(\frac{s}{a}\right), a > 0$. | |
| 9. Find $Z\left[\cos\left(\frac{n\pi}{2}\right)\right]$. | |
| 10. State initial and final value theorem for Z-transforms. | |
| | |

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