Examination report – June 2014 series

2730-027 Advanced Mathematics 2

Section 1 – Areas of good performance
Syllabus reference: 1.6 / 1.8 – Further calculus. Integral evaluation by algebraic substitution was well attempted by some. Syllabus reference: 1.5 / 1.10 / 1.11 – Further calculus. Maclaurin's theorem was understood by some candidates. Simpson's rule was well attempted by many candidates. Syllabus reference: 1.13 / 1.14 / 1.16 / 1.17 – Series. Geometric progression and sum to infinity was well attempted. Syllabus reference: 1.18 / 1.21 – Further complex numbers. Powers, roots and exponential form of complex numbers was generally well attempted by many candidates. Syllabus reference: 1.22 / 1.23 – Partial fractions. Some attempt was made with the partial fraction with linear factors. Syllabus reference: 1.37 / 1.38 / 1.41 / 1.43 – Laplace transforms and their use in solving differential equations. A good attempt was made to determine inverse Laplace transforms. Syllabus reference: 1.27 / 1.28 / 1.30 – Determinants and matrices and their use in solving simultaneous equations. Calculations on matrices was well attempted. Syllabus reference: 1.24 / 1.25 / 1.32 / 1.33 / 1.34 – Determinants and matrices and their use in solving simultaneous equations. Determinant, inverse and matrices was well done. Some marks were obtained by candidates solving simultaneous equations using Cramer's rule. Syllabus reference: 1.24 / 1.34 / 1.38 – Determinants and matrices and their use in solving simultaneous equations. Laplace transforms and their use in solving differential equations. Determining Laplace transforms was well attempted.
Section 2 – Areas for development
Syllabus reference: 1.6 / 1.8 – Further calculus. Integration by parts was generally poorly attempted. Syllabus reference: 1.13 / 1.14 / 1.16 / 1.17 – Series. Binomial expansion with negative indices was poorly attempted. Syllabus reference: 1.43 / 1.44 / 1.45 / 1.46 – Laplace transforms and their use in solving differential equations. Solving a differential equation using Laplace transforms was very poorly attempted.