

1. e-EXPRESSIONS

$$\begin{aligned}
\mathcal{E}_{13}[1 + \mathbf{q}, \mathbf{x}] &= 1 \otimes e_3, \\
\mathcal{E}_{23}[1 + \mathbf{q}, \mathbf{x}] &= s_1 \otimes s_3 + 1 \otimes e_{21}, \\
\mathcal{E}_{33}[1 + \mathbf{q}, \mathbf{x}] &= (s_{11} + s_3) \otimes e_3 + (2s_1 + s_2) \otimes e_{21} + 1 \otimes e_{111}, \\
\mathcal{E}_{53}[1 + \mathbf{q}, \mathbf{x}] &= (s_{21} + s_4) \otimes e_3 + (s_1 + s_{11} + 2s_2 + s_3) \otimes e_{21} + (1 + s_1) \otimes e_{111}, \\
\mathcal{E}_{63}[1 + \mathbf{q}, \mathbf{x}] &= (s_{22} + s_{41} + s_6) \otimes e_3 + (2s_2 + 2s_{21} + s_3 + s_{31} + 2s_4 + s_5) \otimes e_{21} \\
&\quad + (1 + 2s_1 + s_{11} + s_2 + s_3) \otimes e_{111}, \\
\mathcal{E}_{83}[1 + \mathbf{q}, \mathbf{x}] &= (s_{32} + s_{51} + s_7) \otimes e_3 + (s_2 + s_{21} + s_{22} + 2s_3 + 2s_{31} + s_4 + s_{41} + 2s_5 + s_6) \otimes e_{21} \\
&\quad + (1 + 2s_1 + s_{11} + 2s_2 + s_{21} + s_3 + s_4) \otimes e_{111}, \\
\mathcal{E}_{14}[1 + \mathbf{q}, \mathbf{x}] &= 1 \otimes e_4, \\
\mathcal{E}_{24}[1 + \mathbf{q}, \mathbf{x}] &= (s_2) \otimes e_4 + (s_1) \otimes e_{31} + 1 \otimes e_{22}, \\
\mathcal{E}_{34}[1 + \mathbf{q}, \mathbf{x}] &= (s_{11} + s_3) \otimes e_4 + (s_1 + s_2) \otimes e_{31} + (s_1) \otimes e_{22} + 1 \otimes e_{211}, \\
\mathcal{E}_{44}[1 + \mathbf{q}, \mathbf{x}] &= (s_{111} + s_{31} + s_{41} + s_6) \otimes e_4 \\
&\quad + (2s_{11} + s_{21} + 2s_3 + s_{31} + s_4 + s_5) \otimes e_{31} \\
&\quad + (s_{11} + s_2 + s_{21} + s_4) \otimes e_{22} + (3s_1 + 2s_2 + s_3) \otimes e_{211} + 1 \otimes e_{1111}, \\
\mathcal{E}_{64}[1 + \mathbf{q}, \mathbf{x}] &= s_{311} + s_{42} + s_{51} + s_{61} + s_8) \otimes e_4 \\
&\quad + (s_{21} + s_{211} + 2s_{31} + s_{32} + s_4 + 2s_{41} + 2s_5 + s_{51} + s_6 + s_7) \otimes e_{31} \\
&\quad + (s_{11} + s_{111} + s_2 + s_{21} + s_{22} + s_{31} + s_4 + s_{41} + s_6) \otimes e_{22} \\
&\quad + (2s_1 + 2s_{11} + 2s_2 + 2s_{21} + 4s_3 + s_{31} + 2s_4 + s_5) \otimes e_{211} \\
&\quad + (1 + s_1 + s_2) \otimes e_{1111}, \\
\mathcal{E}_{15}[1 + \mathbf{q}, \mathbf{x}] &= 1 \otimes e_5, \\
\mathcal{E}_{25}[1 + \mathbf{q}, \mathbf{x}] &= (s_2) \otimes e_5 + (s_1) \otimes e_{41} + 1 \otimes e_{32}, \\
\mathcal{E}_{35}[1 + \mathbf{q}, \mathbf{x}] &= (s_{21} + s_4) \otimes e_5 + (s_{11} + s_2 + s_3) \otimes e_{41} + (s_1 + s_2) \otimes e_{32} + (s_1) \otimes e_{311} + 1 \otimes e_{221}, \\
\mathcal{E}_{45}[1 + \mathbf{q}, \mathbf{x}] &= (s_{111} + s_{31} + s_{41} + s_6) \otimes e_5 + (s_{11} + s_{21} + s_3 + s_{31} + s_4 + s_5) \otimes e_{41} \\
&\quad + (2s_{11} + s_2 + s_{21} + s_3 + s_4) \otimes e_{32} + (s_1 + s_2 + s_3) \otimes e_{311} + (2s_1 + s_2) \otimes e_{221} + 1 \otimes e_{2111}, \\
\mathcal{E}_{55}[1 + \mathbf{q}, \mathbf{x}] &= (s_{1111} + s_{311} + s_{411} + s_{42} + s_{43} + s_{511} + s_{61} + s_{62} + s_{71} + s_{81} + s_{10}.) \otimes e_5 \\
&\quad + (2s_{111} + s_{211} + 2s_{31} + s_{311} + s_{32} + s_{33} + 3s_{41} + s_{411} + s_{42} + 2s_{51} + s_{52} \\
&\quad \quad + 2s_6 + 2s_{61} + s_7 + s_{71} + s_8 + s_9) \otimes e_{41} \\
&\quad + (2s_{111} + 2s_{21} + 2s_{211} + s_{22} + 2s_{31} + s_{311} + s_{32} + 2s_4 + 3s_{41} + s_{42} + 2s_{51} \\
&\quad \quad + s_6 + s_{61} + s_7 + s_8) \otimes e_{32} \\
&\quad + (3s_{11} + 2s_{21} + 3s_3 + 3s_{31} + s_{32} + 2s_4 + s_{41} + 3s_5 + s_{51} + s_6 + s_7) \otimes e_{311} \\
&\quad + (3s_{11} + 3s_2 + 4s_{21} + s_{22} + 2s_3 + 2s_{31} + 2s_4 + s_{41} + 2s_5 + s_6) \otimes e_{221} \\
&\quad + (4s_1 + 3s_2 + 2s_3 + s_4) \otimes e_{2111} + 1 \otimes e_{11111}.
\end{aligned}$$