Problem #1. Rules:

1. present: no-

2. object =

\[
\begin{array}{c|cc}
\text{singular} & \text{plural} \\
1 & nV- & lV- \\
2 & kV- & lenV- \\
\end{array}
\]

3. present, subject = 1st

<table>
<thead>
<tr>
<th>'strike'</th>
<th>'pierce'</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho-</td>
<td>fu-</td>
</tr>
<tr>
<td>otherwise</td>
<td>ha-</td>
</tr>
</tbody>
</table>

4. future, subject =

\[
\begin{array}{c|c|c}
\text{1st} & \text{2nd} \\
1a & la- \\
\end{array}
\]

5. subject = dual: -'i

6. subject = 1st person pl or 2nd person sg

<table>
<thead>
<tr>
<th>indicative</th>
<th>'because ...'</th>
</tr>
</thead>
<tbody>
<tr>
<td>-n-</td>
<td>-tagihe</td>
</tr>
<tr>
<td>otherwise</td>
<td>-be</td>
</tr>
</tbody>
</table>

Answers:

(a) nonifibe you_{pl} are piercing me
halu'ibe we both will strike him
lifilatagihe because you_{sg} will pierce us
nokufune we are piercing you_{sg}
nolahanagihe because you_{pl} are striking us

(b) noha'ibe you both are striking him
kisifune we will pierce you_{sg}
noienenhotagihe because we are striking you_{pl}
filanagihe because you_{pl} will pierce him
Problem #2. Rules:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>dual</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>people, animals, tools</td>
<td>-∅</td>
<td>-go</td>
<td>-ko</td>
</tr>
<tr>
<td></td>
<td>-n</td>
<td>-do</td>
<td></td>
</tr>
<tr>
<td>fruit</td>
<td>-go</td>
<td>-∅</td>
<td>-go</td>
</tr>
<tr>
<td></td>
<td>-do</td>
<td>-n</td>
<td>-do</td>
</tr>
<tr>
<td>all other things</td>
<td>-do</td>
<td>-n</td>
<td>-(n)</td>
</tr>
</tbody>
</table>

Answers:

<table>
<thead>
<tr>
<th>singular</th>
<th>dual</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>alʊsʰje</td>
<td>alʊʃje</td>
<td>alʊsʰje</td>
</tr>
<tr>
<td>tʃequn</td>
<td>tʃequn</td>
<td>tʃequd</td>
</tr>
<tr>
<td>alʊɡʊk'og</td>
<td>alʊɡʊk'o</td>
<td>alʊɡʊk'og</td>
</tr>
<tr>
<td>k'apʰtʰɔ</td>
<td>k'apʰtʰɔ</td>
<td>k'apʰtʰɔ</td>
</tr>
<tr>
<td>k'ɔdɔ</td>
<td>k'ɔn</td>
<td>k'ɔdɔ</td>
</tr>
<tr>
<td>alʊɡo</td>
<td>al</td>
<td>alʊɡo</td>
</tr>
<tr>
<td>pʰɔ</td>
<td>pʰɔ'</td>
<td>pʰɔɡa</td>
</tr>
<tr>
<td>san</td>
<td>san</td>
<td>sadɔ</td>
</tr>
<tr>
<td>ɬasun</td>
<td>ɬasun</td>
<td>ɬasudɔ</td>
</tr>
<tr>
<td>pïtsɔ</td>
<td>pïtsɔ</td>
<td>pïtsɔɡɔ</td>
</tr>
<tr>
<td>tʰapʰpaaðɔ</td>
<td>tʰapʰpaa</td>
<td>tʰapʰpaa</td>
</tr>
</tbody>
</table>

Problem #3. Rules:

(a) Lhie²nyin² Ngi²mbin² Mbe²phon¹ Ngon²ngwe¹
(b) Nie²tse¹ Sie¹tsie¹ 'yn¹ ndon¹ ngu².
Problem #4. Rules:

- **Word order:**
  
  \[ S_1 \text{ weì ga } S_2 \text{ V O} \]  
  
  in questions \( (S = \text{subject}; \text{V} = \text{verb}; \text{O} = \text{object}) \)
  
  \[ \text{S}_1 \text{ weì ga } \text{S}_2 \text{ V O} \]

  in answers

- **Choice of pronoun** \( (S_2) \):

  \[ S_1 = S_2 \Rightarrow S_2 = \text{ðì}; S_1 \neq S_2 \Rightarrow S_2 = \text{o} \]

- **Vowel lowering:** \( (W = \text{word with lowered vowels}; \text{W} = \text{word without lowered vowels}) \)

  \[ \ldots \text{o} \text{W} \ldots > \ldots \text{o} \text{W} \ldots \]

  \[ \ldots \text{W} \text{áño} \ldots > \ldots \text{W} \text{áño} \ldots \]

- **Tone changes:** \( (I = \text{word boundary}; \text{A} = \text{adjective}; \text{V} = \text{a vowel}; \text{C} = \text{a consonant}) \)

  - caused by adjectives: \( \ldots \text{V[ A} > \ldots \text{V[ A} \)
  
  - caused by verb forms:
    * affirmative form, past: \( \ldots \text{V[ CV(C)VCV}_\text{verb} \)
    * affirmative form, future: \( \ldots \text{V[ CV(C)VCV}_\text{verb} \)
    * negative form: \( \ldots \text{V[ CV(C)VCV}_\text{verb} \)

Answers:

(a) 8. Did this man frighten the thief?
    The girl said that he this man did frighten the thief.
  9. Will the deceived girl kill this youth?
    The deceived girl said that she the deceived girl would kill this youth.
  10. This thief said that the child did not heal the man. or
    This thief said that the child would not heal the man.

(b) 11. \( \text{okàa kìnò ãmodhyômú kofìmù ánò à?} \)
    \( \text{smò weì ga ó kìnò ãmodhyômú kofìmù ánò.} \)
  12. \( \text{avùrámú ììmù ánò ñwaßeße edèì à?} \)
    \( \text{avùrámú ììmù ánò weì ga óki ñwaßeße edèì.} \)

(c) Nouns are not affected by any grammatical tone changes when placed at the very end of the sentence, before Œ or before ánò. Because of this, the base form for ‘thief’ is òzòjì (7.), and the base form for ‘girl’ is amémúrè (2.).

\(^1\)Usually has negative past interpretation, but can denote negative future if the surrounding context requires it.
Problem #5.  body part – wí ‘human’ = spatial preposition:

sêè  (liver)  at the center
yîk  (face)    at the surface
zu  (head)   above, on

Answers:

(a)  ?áá    (to put)  to put
  ?áá náng nú kô  (to put + foot + edge + hole)  to be dying
  ?áá sêè  (to put + liver)  to envy
búmá yîk  (hair + eyes)  eyelash
búmá zu yîk  (hair + above, on + eyes)  eyebrow
dáng gôk  (bad + snake)  poisonous snake
dí fô  (good + field)  good field
dí sêè  (good + liver)  happiness
kô yîk  (hole + eyes)  eye socket
kô zôk  (hole + nose)  nostril
náng wî  (foot + human)  foot
nú fô  (edge + field)  field edge
nú lébé  (edge + tongue)  tip of the tongue
sêè wî  (liver + human)  liver
yîk  (face)    at the surface
yîk wî  (face/eyes + human)  face/eyes
zu  (head)   above, on

(b)  búmá zu  (hair + head)  hair (on the head)
kô  (hole)    hole
lébé gôk  (tongue + snake)  snake’s tongue
lébé wî  (tongue + human)  tongue

(c)  sêè  (liver)   at the center
zu wî  (head + human)  head
dáng sêè  (bad + liver)  displeasure
zôk wî  (nose + human)  nose