fhJ (Ear)

**fhJ Nfshik**

 gpw xypfis xUtd; jd; nrtpfshy; Nfl;L Ghpe;J nfhs;s Kbahj epiy fhJ Nfshik vdg;gLk;.

**fhjpd; mikg;G**

fhjpd; ghfq;fis %d;W tifahf gphpf;fyhk;. mit:

1. ntspf;fhJ

2. eLf;fhJ

3. cl;fhJ

1. **ntspf;fhJ**

ntspf;fhjpy; fhJkly;> nrtpg;ghij> nrtpg;giw mike;Js;sJ.

 fhJkly; - Pinna

 nrtpg;ghij - Ear canal

 nrtpg;giw - Ear drum

1. **eLf;fhJ**

 eLf;fhjpy; rpw;nwYk;Gr; rq;fpyp cs;sJ. rpw;nwYk;Gr; rq;fpypapy; %d;W rpw;nwYk;Gfs; cs;sd. mit Rj;jp> gl;il> mq;ftb MFk;. gpd;dH eLf;fhjpypUe;J eLf;fhJ Foha; njhz;ilf;F tUfpwJ.

 rpw;nwYk;G rq;fpyp - Ossicular Chain

 Rj;jp - Malbus

 gl;il - Incus

 mq;ftb - Stapes

 eLf;fhJ Foha; - Eusta Chain Tube

1. **cl;fhJ**

 cl;fhjpy; ej;ij vYk;GfSk;> miutl;lf;Foha;fSk; mike;Js;sd.

**fhJ Nfl;Fk; tpjk;**

 fhJkly; ntspapy; cs;s xypfis xUq;fpizj;J nrtpf;Foha; topahf nrd;W nrtpg;giwf;Fs; NkhJfpwJ. ,jdhy; rpw;nwYk;G rq;fpypfs; mirfpwJ. ,e;j mirtpd; %yk; xyp miyfs; ej;ij vYk;ig mirj;J ej;ij vYk;gpYs;s epz ePH mirfpwJ. ,jd; %yk; epz ePhpYs;s Nuhk nry;fs; mire;J xyp miyfs; miutl;lf; Foha; topahf Nfs;tp euk;Gfs; %isf;F vLj;Jr; nry;yg;gLfpwJ. ,t;thW xypfis ek;khy; Nfl;f KbfpwJ.

**fhJ Nfshj jd;ikapd; epiy:**

 Nfl;Fk; jpwd; ghjpf;fg;gl;l Foe;ijfSf;Fg; NgRtjpYk;> jfty; ghpkhw;wk; nra;J nfhs;tjpYk; rpukk; ,Uf;Fk;. gpw xypfisf; Nfl;fTk;> Ghpe;J nfhs;sTk; ,ayhjjhy; mtHfshy; Ngr ,aYtjpy;iy. Foe;ijfs; gpwH NgRtijf; Nfl;Lk;> Ghpe;J nfhz;Lk;> Ngr fw;Wf; nfhs;tjhy; Nfl;Fk; jpwd; ghjpf;fg;gl;l Foe;ijfSf;Fg; Ngr Kbtjpy;iy. jd;idr; Rw;wp ,Ug;gtHfs; vjw;fhf NgRfpwhHfs;> jfty; ghpkhw;wk; nra;J nfhs;fpwhHfs; vd;gij mtHfshy; Ghpe;J nfhs;s ,aYtjpy;iy.

**fhJ Nfshikf;F Kf;fpa fhuzq;fs;:**

1. cwT Kiwj; jpUkzk;.
2. guk;giuahf fhJNfshjtHfs;.
3. fUTw;w jha;f;F Vw;gLk; Neha;fs;. (mk;ik)
4. mNahbd; rj;Jf; FiwT.
5. R.H xt;thik.
6. jtwhd kUe;J khj;jpiufs;.
7. jhkjkhd gpurtk;.
8. tpgj;Jf;fs;.
9. msTf;F mjpfkhd rj;jk; njhlHe;J fhjpy; Nfl;ly;.
10. Njq;fp epw;Fk; mRj;j ePhpy; Fspj;jy;.
11. fhJfisr; Rj;jg;gLj;j gad;gLj;Jk; nghUl;fs;.
12. fhJ typf;F gad;gLj;Jk; if kUe;Jfs;.
13. rsp ,Uky;fSf;F jFe;j rpfpr;ir mspf;fhky; ,Uj;jy;.
14. **cwT Kiwj; jpUkzk;**

 cwTKiwapy; jpUkzk; nra;J itg;gjhYk; gpwf;Fk; Foe;ij fhJ Nfshj Foe;ijahfg; gpwf;f tha;g;Gs;sJ.

(v.fh.)

1. mj;ij kfis> khkd; kfDf;Fj; jpUkzk; nra;J itj;jy;.
2. mf;fhs; / jq;if kfis jpUkzk; nra;J itj;jy;.

**2. guk;giuahf fhJ NfshjtHfs;**

 guk;giuahfNt ngw;NwhHfs; fhJ NfshjtHfshf ,Ue;jhy; mtHfSf;Fg; gpwf;Fk; Foe;ijfs; fhJ NfshjtHfshfg; gpwf;f tha;g;Gs;sJ.

(v.fh.)

 mk;kh> mg;gh> ghl;b> jhj;jh - ,tHfspy; ahUf;fhtJ fhJ Nfshky; ,Ue;jhy; gpwf;Fk; Foe;ijf;F fhJ Nfshky; Nghf tha;g;Gs;sJ.

**3. fUTw;w jha;f;F Vw;gLk; rpy Neha;fs; (mk;ik)**

 jha; fUTw;W ,Uf;Fk;NghJ Vw;gLk; rpy Neha;fshYk; Foe;ijapd; fhJ Nfl;fhky; Nghf tha;g;Gs;sJ.

 (v.fh.) jha; fUTw;W ,Uf;Fk; NghJ mk;ik Neha; te;jhy; jhapd; fhij ghjpf;fhky; gpwf;Fk; Foe;ijapd; fhij ghjpf;f tha;g;Gs;sJ.

**4. mNahbd; rj;J Fiwthf ,Ue;jhy;**

 fUTw;w jhapd; cztpy; mNahbd; rj;J Fiwthf ,Ue;jhy;> my;yJ ,y;yhtpl;lhy; gpwf;Fk; Foe;ijf;F fhJ Nfshky; Nghf tha;g;Gs;sJ.

 (v.fh.) kPd;> fly; ez;L Kjypatw;wpy; mNahbd; rj;J mjpfkhf fhzg;gLfpwJ. vdNt ,j;jifa czTg; nghUl;fs; rhg;gpLtjd; %yk; clypy; mNahbd; rj;ij mjpfhpf;fr; nra;ayhk;.

**5. R.H** **xt;thik**

 je;ijapd; uj;jj;jpy R.H Ngf;l;lH; ,Ue;J jhapd; uj;jj;jpy; ,y;yhky; ,Ue;jhy; mtHfSf;Fg; gpwf;Fk; Foe;ijf;F fhJ Nfshky; Nghf tha;g;Gs;sJ.

**6. jtwhd kUe;J khj;jpiufs;**

 jha; fUTw;W ,Uf;Fk; NghJ kUj;Jthpd; MNyhrid ,y;yhky; jdf;F Vw;gLk; Neha;fSf;F kUe;J khj;jpiufs; rhg;gpLtjhy; gpwf;Fk; Foe;ij fhJ Nfshj Foe;ijahfg; gpwf;f tha;g;Gs;sJ.

**7. jhkjkhd gpurtk;**

 Fwpg;gpl;l me;j Neuj;jpy; Foe;ij gpwf;fhky; gpurtk; jhkjkhFk; NghJ gpuhz thA Foe;ijapd; %isf;F fpilf;fhky; fhJ NfshikAk;> kdtsHr;rp FiwAk; Vw;glyhk;.

**8. tpgj;Jf;fs;**

 vjpHghuhky; elf;Fk; tpgj;Jf;fshy; jiyapy; mbgl;L fhjpd; cl;gFjpapy; cs;s Nfs;tp euk;Gfs; ghjpf;fg;gl;lhy; fhJ Nfshky; Nghf tha;g;Gs;sJ.

**9. msTf;F mjpfkhd rj;jk; njhlHe;J fhjpy; Nfl;ly;**

 msTf;F mjpfkhd rj;jk; njhlHe;J fhjpy; Nfl;Lf;nfhz;bUe;jhy; ehsiltpy; nrtpg;giw fpope;J fhJ Nfshky; Nghf tha;g;Gs;sJ.

(v.fh.) 1. iu]; kpy;ypy; Ntiy nra;gtHfs;.

 2. njhopw;rhiyfspy; Ntiy nra;gtHfs;.

**10. Njq;fp epw;Fk; mRj;j ePhpy; Fspj;jy;**

 Njq;fp epw;Fk; mRj;j ePhpy; %o;fp Fspg;gjhy; ePhpYs;s J}rpfs;> fpUkpfs; fhjpDs; nrd;W fhij ghjpf;f tha;g;Gs;sJ.

**11. fhJfisr; Rj;jg;gLj;j gad;gLj;Jk; nghUl;fs;**

 fhJfisr; Rj;jg;gLj;j gad;gLj;Jk; rpy nghUl;fshy; fhjpy; Gz; Vw;gl;L ehsiltpy; fhJ Nfshky; Nghf tha;g;Gs;sJ.

 (v.fh.) gpd;> NfHg;gpd; Nghd;witfis fhJfisr; Rj;jg;gLj;j gad;gLj;Jjy;.

**12. fhJ typf;.F gad;gLj;Jk; if kUe;Jfs;**

 kUj;Jthpd; MNyhridapy;yhky; fhJtypf;F fhjpy; if kUe;Jfs; tpLtjhy; fhJ Nfshky; Nghf tha;g;Gs;sJ.

 (v.fh.) cg;Gf;fiury;> tj;jy; kpsfpy; vz;nza; fhr;rp Cw;Wjy;.

**13. rsp> ,UkYf;F jFe;j rpfpr;ir vLf;fhky; ,Uj;jy;**

 rsp> ,Uky; Nghd;w Neha;fSf;F Muk;gj;jpNyNa kUe;J khj;jpiufs; vLf;fhky;> mjpfhpf;Fk; gl;rj;jpy; fhjpypUe;J rPo; tbaTk;> mjdhy; fhJ Nfshky; NghfTk; tha;g;Gs;sJ.

**fhjpy; rhjhuzkhf Vw;gLk; Neha;fs;**

1. Gz;fs;
2. gUf;fs;
3. fl;bfs;

**fhJ Nfshikapd; tifg;ghL**

1. cWg;G FiwghL
2. nray;ghl;Lf; Fiw

**1. cWg;G FiwghL**

 fhJ kly; %bNah my;yJ fhJ kly; ,y;yhkNyh ,Ue;jhy; ,J cWg;G FiwghL vdg;gLk;. cWg;G FiwghL cilatHfSf;F fhJ Nfl;Fk;. Mdhy;> mjd; msT FiwAk;.

**2. nray;ghl;Lf; Fiw**

 fhjpd; cs; cWg;Gfs; ghjpf;fg;gl;L nray;gl ,ayhky; ,Ug;gJ nray;ghl;Lf; Fiw vdg;gLk;. ,tHfSf;F cl;fhJ ghjpf;fg;gl;bUf;Fk;. ,e;j Fiw cilatHfSf;F fhnjhypf;fUtp gad;gLj;jpdhYk; fhJ Nfl;fhJ.

**Nfl;Fk; jpwd; Fiw cilatHfisf; fz;Lgpbj;jy;**

 Nfl;Fk; jpwd; Fiw cilatHfisg; ghHj;jTld; fz;Lgpbf;f ,ayhJ. mtHfSila elj;ijia itj;J Nfl;Fk; jpwd; Fiw cilatHfisf; fz;Lgpbf;fyhk;. ehk; mtHfSld; NgRk; NghJ gjpy; nrhy;yhky; ,Ug;ghHfs;. ,jdhy; jho;T kdg;ghd;ik Vw;gl;L gpw gps;isfSld; NgRtijAk;> goFtijAk; jtpHg;ghHfs;. ,jd; %yKk; fhJ Nfl;Fk; jpwd; Fiw cilatHfisf; fz;Lgpbf;fyhk;.

**fhJ Nfshj Foe;ijfisf; fz;Lgpbf;Fk; topKiwfs;**

**0 - 3 khjq;fspy;**

 Foe;ij ,Uf;Fk; ,lj;jpypUe;J %d;W mb J}uj;jpw;Fs; rj;jkhf ehk; if jl;Lk; NghJ Foe;ij jpLf;fplhkypUj;jy;.

**3 - 6 khjq;fspy;**

 xyp tUk; jpiria Nehf;fp jiyiaj; jpUg;gp ghHf;fhjpUj;jy;> ngw;NwhHfspd; nfhQ;Rjiyg; Ghpe;J nfhz;L gjpYf;F nray;glhkypUj;jy;.

 **6 - 10 khjq;fspy;**

 xUtuJ FuYf;Nfh> kzpNahirf;Nfh> jd; ngaiug; gpwH nrhy;Yk; nghONjh gjpyspf;fhjpUj;jy;.

 (v.fh.) Ntz;lhk;> lhl;lh Nghd;w xw;iw thHj;ijfisg; Ghpe;J nfhs;shjpUj;jy;.

**10 - 15 khjq;fspy;**

 Foe;ij> gpw nghUl;fis my;yJ Ml;fisr; Rl;bf; fhl;lhjpUj;jy;.

 XUtH kiwe;jpUe;J Foe;ijapd; ngaH nrhy;yp mioj;jhy; gjpyspf;fhjpUj;jy;.

 (v.fh.) NubNah> Nlg;hpf;fhHlH vOg;Gk; ghly;fisf; ftdpf;fhjpUj;jy;.

**15 - 18 khjq;fspy;**

 rpW rpW fl;lisfisg; gpd;gw;whjpUj;jy;. ,j;jifa Nfl;gjpy; FiwghLs;s Foe;ijfSf;Fg; Ngr fw;Wf; nfhLg;gij tpl ,ad;w tifapy; jfty; ghpkhw;wk; nra;tjw;F gapw;Wtpg;gNj kpf mtrpakhdJ. XU nraiy Foe;ijfSf;Fr; nra;Ak; NghJ mij thHj;ijahYk;> nra;ifahYk; Ghpa itf;f Ntz;Lk;.

**Nfl;Fk; jpwid ghpNrhjpj;jy;**

 fhJ Nfl;Fk; jpwidg; ghpNrhjidr; nra;Ak; fUtp MbNah kPl;lH MFk;. MbNah kPl;lH %yk; ghpNrhjpj;J MbNahfpuhgpy; gjpT nra;a Ntz;Lk;.

 MbNah kPl;lhpy; 500> 1000> 2000> 4000 frequency kl;LNk ghpNrhjpf;fg;gLfpwJ. Vndd;why; ehk; NgRk; Ngr;nrhyp ,e;j ehd;F frequencyf;Fs; jhd; mlq;fpapUf;Fk;. Nfl;Fk; jpwidg; ghpNrhjpf;Fk; NghJ Kjypy; tyJ fhijAk; gpd; ,lJ fhijAk; ghpNrhjpf;f Ntz;Lk;.

**Nfl;Fk; jpwd; ghjpg;ig mstpLjy;**

 fhJ Nfshikapd; msit fPo;fz;lthW tifg;gLj;jyhk;.

 15 Decibal -f;F fPo; ,Ue;jhy; rhjhuzkhf Nfl;Fk; jpwd; cilatHfs;.

 15 Kjy; 35 Decibal - Fiwthf Nfl;Fk; jpwd; ,oe;jtHfs;.

 35 Kjy; 65 Decibal - kpjkhf Nfl;Fk; jpwd; ,oe;jtHfs;.

 65 Kjy; 85 Decibal - jPtpukhf Nfl;Fk; jpwd; ,oe;jtHfs;.

 85 Kjy; 120 Decibal - G+uzkhf Nfl;Fk; jpwd; ,oe;jtHfs;.

 Fiwthf Nfl;Fk; jpwd; ghjpg;gile;jtHfSf;F rj;jkhfg; NgRk; NghJ kl;LNk Nfl;f KbAk;.

 kpjkhf Nfl;Fk; jpwd; ghjpg;gile;jtHfSf;F fhnjhypf;fUtp gad;gLj;jpdhy; jhd; fhJ Nfl;Fk;.

 jPtpukhf Nfl;Fk; jpwd; ghjpf;fg;gl;ltHfSf;F fhnjhypf; fUtp gad;gLj;jpdhYk; xypfis KOikahf Nfl;f ,ayhJ.

 G+uzkhf Nfl;Fk; jpwd; ghjpg;gile;jtHfSf;F Kfj;ijg; ghHj;J nra;ifapy; Ngrpdhy; kl;LNk Ghpe;J nfhs;s KbAk;. ,tHfSf;F fhnjhypf;fUtp gad; jUtjpy;iy.

**fhnjhypf; fUtp gad;gLj;Jjy;**

 fhnjhypf; fUtp fhjpy; Nfl;Fk; rj;jj;ij mjpfhpj;J fhl;LfpwJ. ,f;fUtpapy; Njitahd msT rj;jj;ij $l;bAk;> Fiwj;Jk; itj;Jf; nfhs;syhk;. fhJ Nfl;Fk; jpwd; ve;j msTf;F ghjpf;fg;gl;bUf;fpwJ vd;W ghpNrhjp;j;J vt;tsT tpiuthf ,f;fUtpia gad;gLj;JfpNwhNkh me;j msTf;F ed;ik gaf;Fk;.

**Nfl;Fk; jpwd; ghjpg;gile;jtHfSf;F kWtho;T mspj;jy;**

1. nghUl;fisf; fhl;b mjd; %yk; thHj;ijfisg; Ghpa itj;jy;.
2. iftpuy; vOj;Jf;fis gad;gLj;jp mjd; %yk; thHj;ijfisg; Ghpa itj;jy;.
3. cjl;lirtpd; %yKk;> nra;ifapd; %yKk; thHj;ijfisg; Ghpa itf;fyhk;.
4. rpy tpisahl;Lfspd; %yk; thHj;ijfisg; Ghpa itj;jy;.
5. gpwUld; gof itg;gjd; %yk; vspjpy; thHj;ijfisg; Ghpa itf;fyhk;. NkYk; Nfl;Fk; jpwd; ghjpf;fg;gl;l Foe;ijfsplk; md;G fhl;l Ntz;Lk;. mtHfspd; czHTfisg; Ghpe;J nfhz;L nghWikahfg; gjpyspf;f Ntz;Lk;. rKjhaj;jpy; mtHfisAk; xU mq;fj;jpdH vd Ghpe;J nray;gl Ntz;Lk;.

**Nfl;Fk; jpwd; ghjpg;igj; jLf;Fk; topKiwfs;**

1. jha; fUTw;W ,Uf;Fk; NghJ Nghjpa ftdpg;G> kUj;JtNrit> ey;y Cl;lr;rj;Js;s czT Mfpait mspj;jy;.
2. rsp> ,Uky;fSf;F cldbahf rpfpr;ir mspj;jy;.
3. Nfl;Fk; jpwd; ghjpg;ig fz;lwpe;jTld; fhnjhypf;fUtpiag; gad;gLj;Jtjd; %yk; NkYk; ghjpg;gilahky; ghJfhf;fyhk;.
4. Foe;ijfspd; fd;dj;jpYk;> fhjpYk; mbf;fhky; ,Ug;gJ.
5. n[Hkd; mk;ik jLg;G+rp NghLtjd; %yk; jha; fUTw;W ,Uf;Fk;NghJ mk;ik Neha; tuhky; ghJfhf;fyhk;.