

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH**

**LOK SABHA
UNSTARRED QUESTION NO. 5499
ANSWERED ON 05.04.2023**

Divya Nayan

5499. MS. DEBASREE CHAUDHURI:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) the details and features of 'Divya Nayan' a device developed for the visually impaired by the Council of Scientific and Industrial Research (CSIR);**
- (b) whether the said device has been made available to the common man and if so, the details thereof;**
- (c) whether CSIR has also developed such other devices which benefit the common man; and**
- (d) if so, the details thereof ?**

ANSWER

**MINISTER OF STATE (INDEPENDENT CHARGE)
SCIENCE & TECHNOLOGY AND EARTH SCIENCES
(DR. JITENDRA SINGH)**

- (a) Divya Nayan is a personal reading machine for visually impaired developed by the constituent laboratory of Council of Scientific and Industrial Research (CSIR) namely, CSIR-Central Scientific Instruments Organisation (CSIO), Chandigarh. The device can be used to read printed or digital document in the form of speech output. User can place the device over the document to be read and manually scan it. Based on the principle of contact scanning, it can analyse a multi column document and provide seamless reading. The reading device uses language dependent optical character recognition to convert the image into text and a text to speech converter, further converts the text into audio. Audio files are stored in the machine and can be listened back. The device is handheld, standalone, portable,**

completely wireless and IoT enabled. It is currently available in Hindi, English, Bengali, Telugu, Tamil, Kannada, and Punjabi but is further compatible for other Indian and foreign languages. It has interfaces such as USB, Bluetooth, Wi-Fi, LAN, Headphone etc. The salient features of the device are as under:

- **Wireless and Portable - standalone, completely wireless and IoT enabled;**
 - **Multifunctional – read printed, e-books, e-news, recording and reading speech;**
 - **Multilanguage - currently supports Hindi, English, Bengali, Tamil, Telugu, Kannada and Punjabi;**
 - **Online Processing – document batch processing organisation;**
 - **Document Storage – sync document;**
 - **Page orientation detection and correction;**
 - **Capable of reading Multi-Column document;**
 - **Rechargeable lithium ion battery; and**
 - **Internal memory of 32 GB for document storage**
- (b) Yes, Sir. The device had been made available to few visually impaired individuals and institutes. In this regard, 31 numbers of trainings cum workshops have also been conducted across the country. Further, the technology has been transferred to Central Electronics Limited (CEL), Sahibabad as an industrial partner for manufacturing and marketing of the devices to serve visually impaired.**
- (c) Yes, Sir.**
- (d) Some of the such other significant devices developed by CSIR for the benefit of the common man are as under:**
- **Myoelectric Hand for the persons having below elbow amputation**
 - **Electronic Knee for the persons having above knee amputation**
 - **Electronic Control Module for powered wheelchair**
 - **Ksheer Scanner for detecting adulteration in milk**
 - **Ksheer Analyzer for analyzing fat contents in milk**
 - **IoT enabled Smartphone based Colposcope for Cervical Cancer screening**
 - **E-Trike for differently abled persons**
 - **IoT enabled Smart Watch for Vital Health Parameters.**
