Session 2007

BREVET DE TECHNICIEN SUPÉRIEUR

OPTICIEN – LUNETIER

GÉNIE OPTIQUE

Groupe 10

ÉPREUVE DE LANGUE VIVANTE ÉTRANGÈRE : U 2

ANGLAIS

Durée : 2 heures

Coefficient O-L : 1

Coefficient G-O : 2

L'utilisation du dictionnaire bilingue est autorisée.

L'usage de la calculatrice est interdit.

Dès que le sujet vous est remis, assurez-vous qu'il soit complet.

Le sujet comporte 2 pages, numérotées de 1/2 à 2/2

ANG/LVE3

Session 2007	
BTS OPTICIEN LUNETIER-GÉNIE OPTIQUE **Épreuve : Langue vivante étrangère : ANGLAIS**	**Durée : 2h00** **Coefficient : 1 (OL)** **2 (GO)**

EYES LIKE A HAWK

One day your optician could give you superhuman eyesight

Think you've got perfect vision? Think again. Pablo Artal reckons he can double the sharpness of anybody's vision, no matter how good it is to start with. He revealed his "smart spectacles" technology at a conference on adaptive optics in Murcia, Spain, last week. Few people would choose to wear Artal's prototype, as the computer hardware it relies on takes up a full square metre of desk space. "But the key optical component is very small and cheap," says Artal, a researcher in the optics laboratory at the University of Murcia.

Conventional spectacles correct for poor focusing and astigmatism in the eye's lens. But almost everyone has subtle additional faults which vary as their pupils dilate and their eyes focus. To try and correct for these problems, Artal turned to the techniques of adaptive optics, which are commonly used in telescopes and spy satellites.

In adaptive optics, light from a star is bounced off a mirror which changes shape to compensate for the distortions introduced by fluctuations in the atmosphere. It is these fluctuations in the density of the atmosphere that make stars twinkle. Artal's spectacles do the same thing for transient imperfections in the eye, correcting for them 25 times every second. "Everything sharpens up as you switch on'" he says.

(...) Artal says that someone wearing the new specs can see at a range of 12 metres objects so small that someone with 20:20 vision can't see them farther away than 6 metres. But Fred Fitzke, an ophthalmologist at University College London, is more cautious: "At the moment, we don't know what other limits there are to vision – like the structure of photoreceptors in the eye, or whether the brain can even use the extra information. But I look forward to finding out with this kind of device."

As well as having possibly military applications, the super specs can be used in reverse to take real-time precision images of the retina. "You can use it to take microscopic images of individual cells and diagnose eye diseases very early," says Austin Roorda of the University of Houston.

Eugenie Samuel ***New Scientist, 25 November 2000***

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QUESTIONS

I - COMPRÉHENSION DU TEXTE (10 points)

1) Faire un résumé du texte **en français**. (150 mots + ou – 10%)
Indiquer le nombre de mots utilisés. **(6 points)**

2) Traduire depuis la ligne 21 « At the moment... » jusqu'à la ligne 24 « this kind of device». **(4 points)**

II - EXPRESSION ÉCRITE EN ANGLAIS (10 points)

Le candidat traitera les 2 questions (150 – 180 mots en tout).
Indiquer le nombre de mots utilisés.

1) In which fields do you think those super specs may be useful ?

2) Do you know any devices and/or methods used to try and improve people's eyesight ?