# *A CROSS-NATIONAL STUDY OF SCIENCE LITERACY AND PERCEPTION OF RADIATION ACROSS SEVEN FNCA COUNTRIES*

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# *PUBLIC INFORMATYION AND OUTREACH AS A PROCESS OF COMMUNICATION*

## I. FIVE VARIABLES IN A GENERALIZED MODEL OF COMMUNICATION:

1. **WHO** (THE SOURCE, THE SENDER) SAYS
2. **WHAT** (THE MESSAGE, THE CONTENT)
3. **TO WHOM** (THE AUDIENCE, THE RECEIVER)
4. **HOW** (THE CHANNEL, THE MEDIA) AND
5. **WITH WHAT EFFECT** (THE EFFECT)

## II. "PUBLIC INFORMATION AND OUTREACH" INVOLVES SYSTEMATIC STUDIES ON THE SENDER, THE MESSAGE, THE MEDIA, THE AUDIENCE AND THE EFFECT OF COMMUNICASTION.

# *WHAT IS "FNCA"?*

## WHAT DOES "FNCA" STAND FOR?

IT STANDS FOR "THE **F**ORUM FOR **N**UCLEAR **C**OOPERATION IN **A**SIA".

## FNCA CONSISTS OF 8 ASIA-PACIFIC NATIONS:

AUSTRALIA, CHINA, INDONESIA, JAPAN, KOREA, THE PHILIPPINES, THAILAND AND VIET NAM.

## WHAT DOES FNCA DO?

FNCA HAS A TOTAL OF 11 RESEARCH PROJECTS IN 8 AREAS, INCLUDING "RESEARCH REACTORS", "AGRICULTURAL USE OF RADIATION", "RADIATION ONCOLOGY" AND "PUBLIC INFORMATION".

# *THE PURPOSE OF THE CROSS-NATIONAL SURVEY STUDY*

1. **WHAT ARE 1000 MALE AND FEMALE HICH-SCHOOL STUDENTS IN EACH OF THE SEVEN FNCA COUNTRIES INTERESTED IN ?**

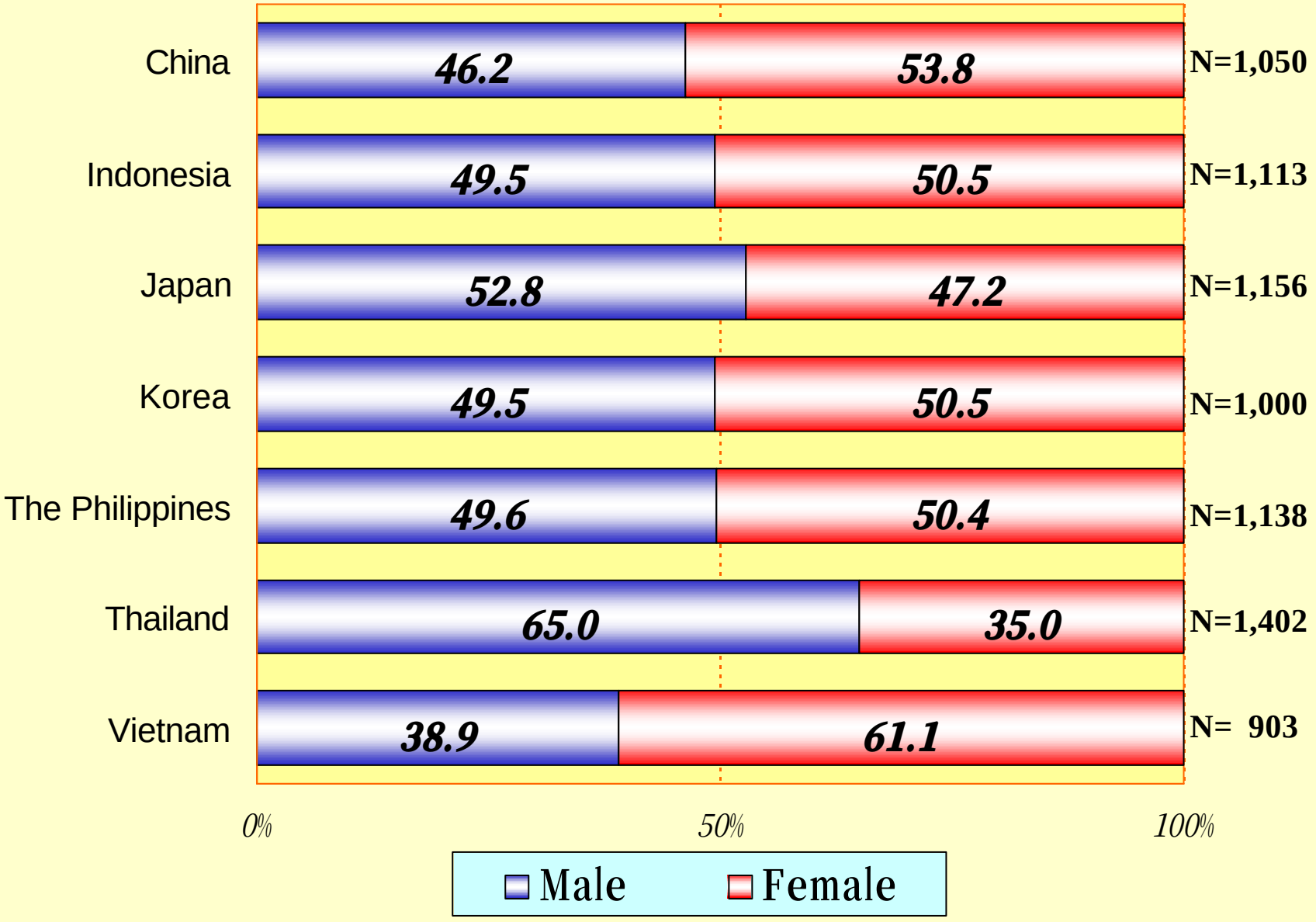
2. **HOW DO THEY LIKE TO STUDY SCIECE COURSES AT SCHOOL?**

3. **WHAT ARE THEIR SOURCES OF INFORMATION ON SCIENCE AND TECHNOLOGY?**

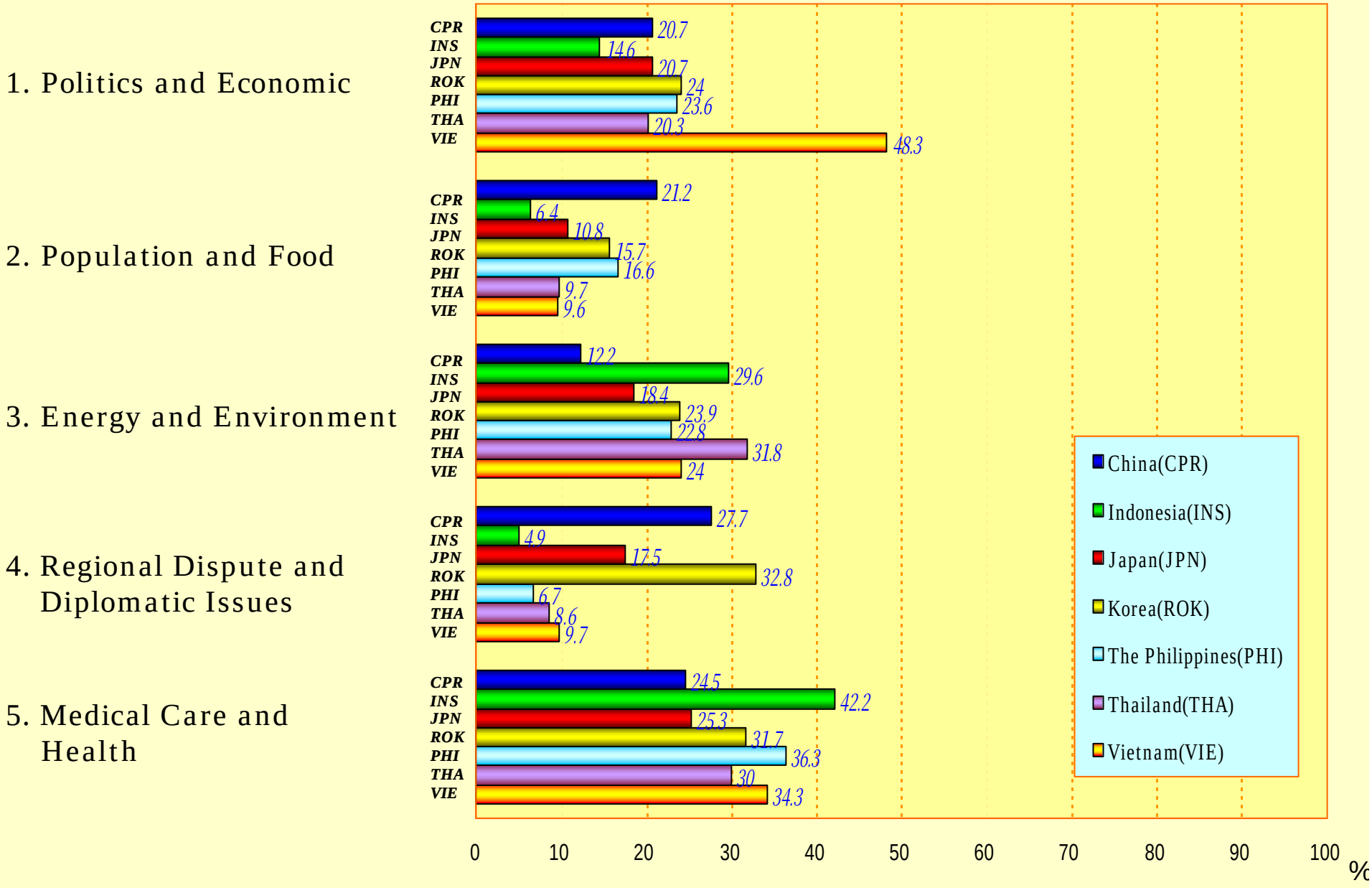
4. **HOW DO THEY LEARN ABOUT “RADIATION” OR “RADIOACTIVITY” ?**

5. **WHAT IS THE MEANING OF “RADIATION” TO THEM? AND WHAT DO THEY WANT TO LEARN ABOUT “RADIATION”?**

# 1. Percentages of Male and Female Students

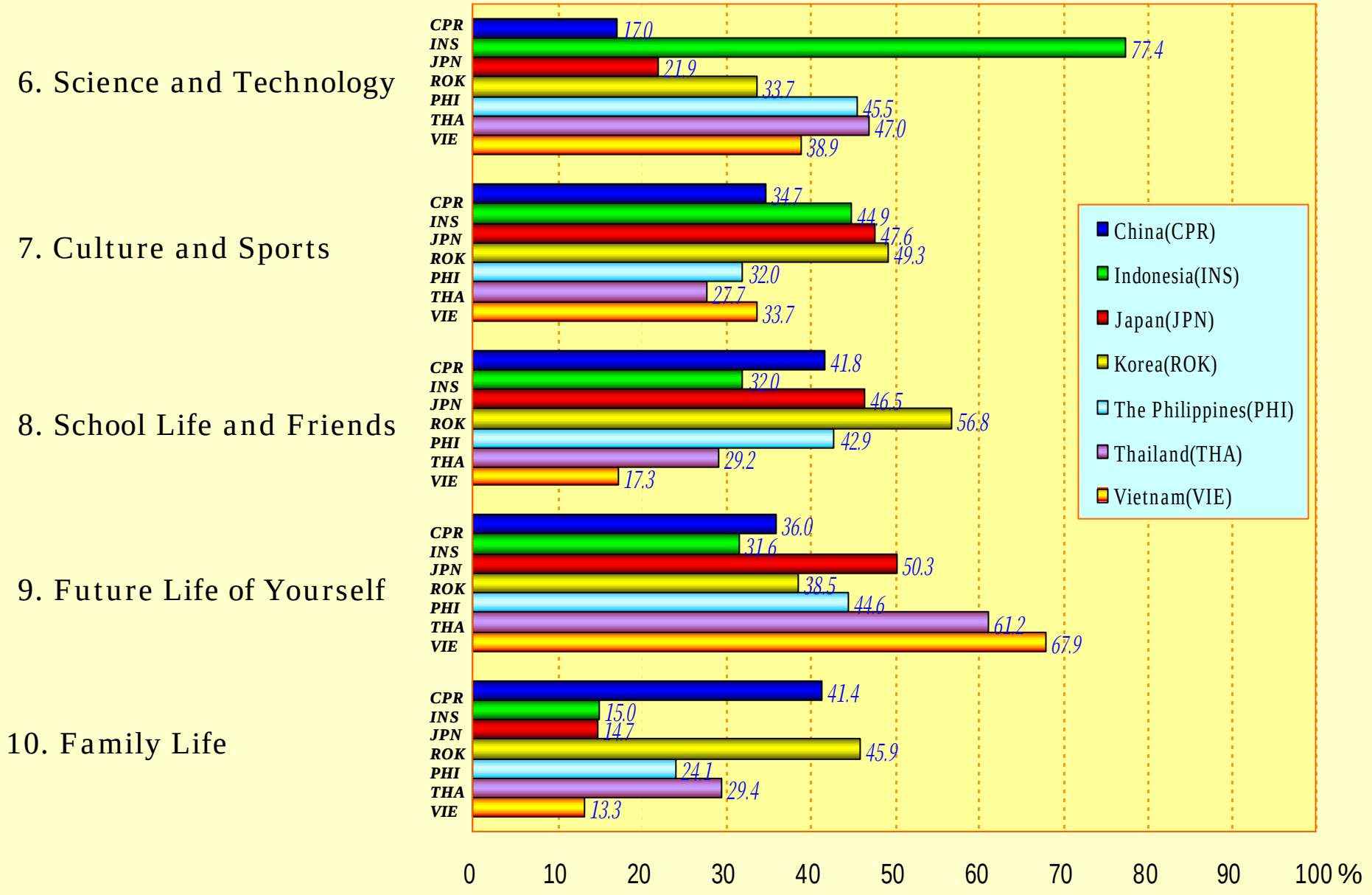


# 2-1. Which among the following issues/items are you most interested in? Please select up to three of your highest interest.



# 2-2. Which among the following issues/items are you most interested in? (continued)

## Please select up to three of your highest interest.

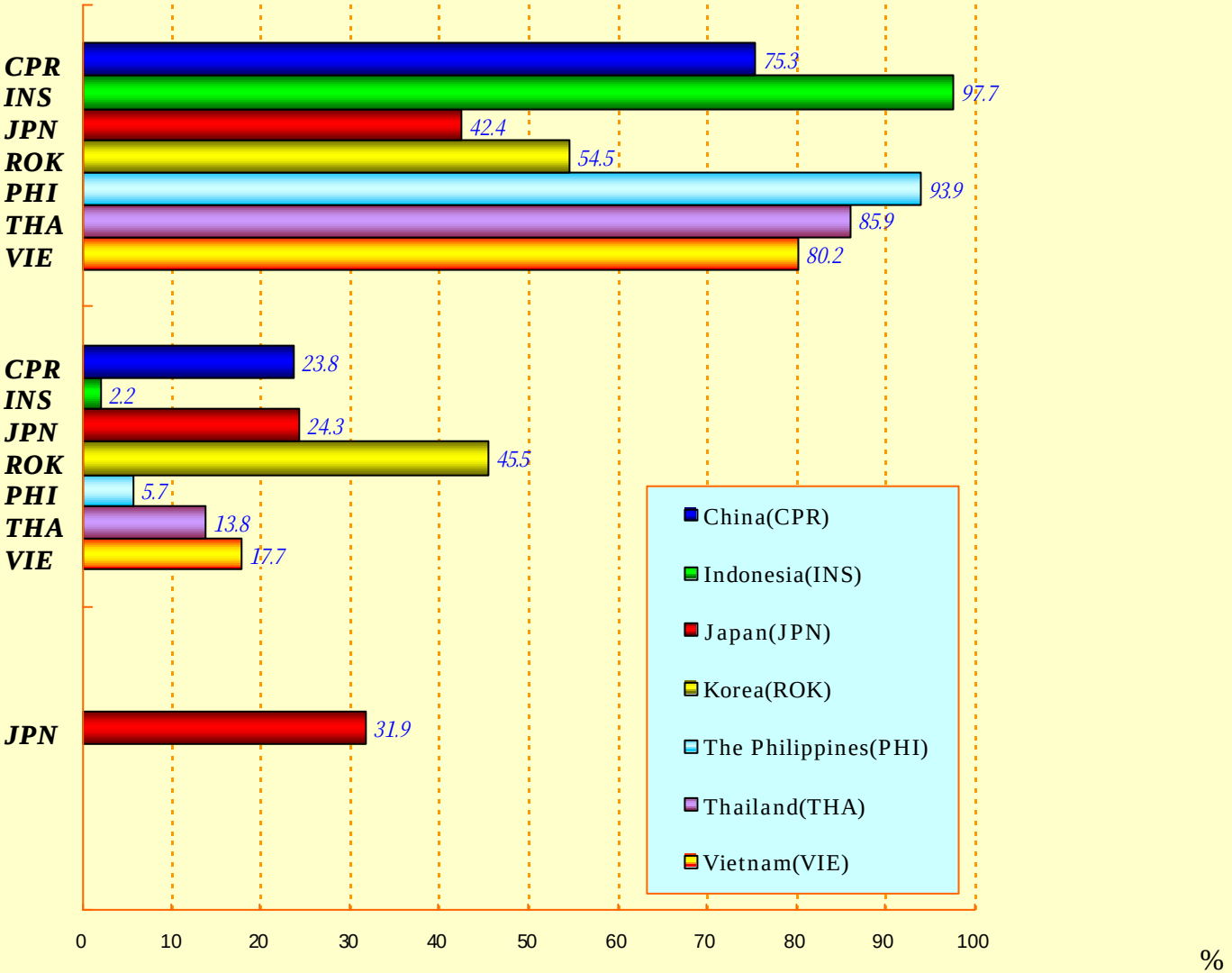


# 3. Do you like science courses given in school?

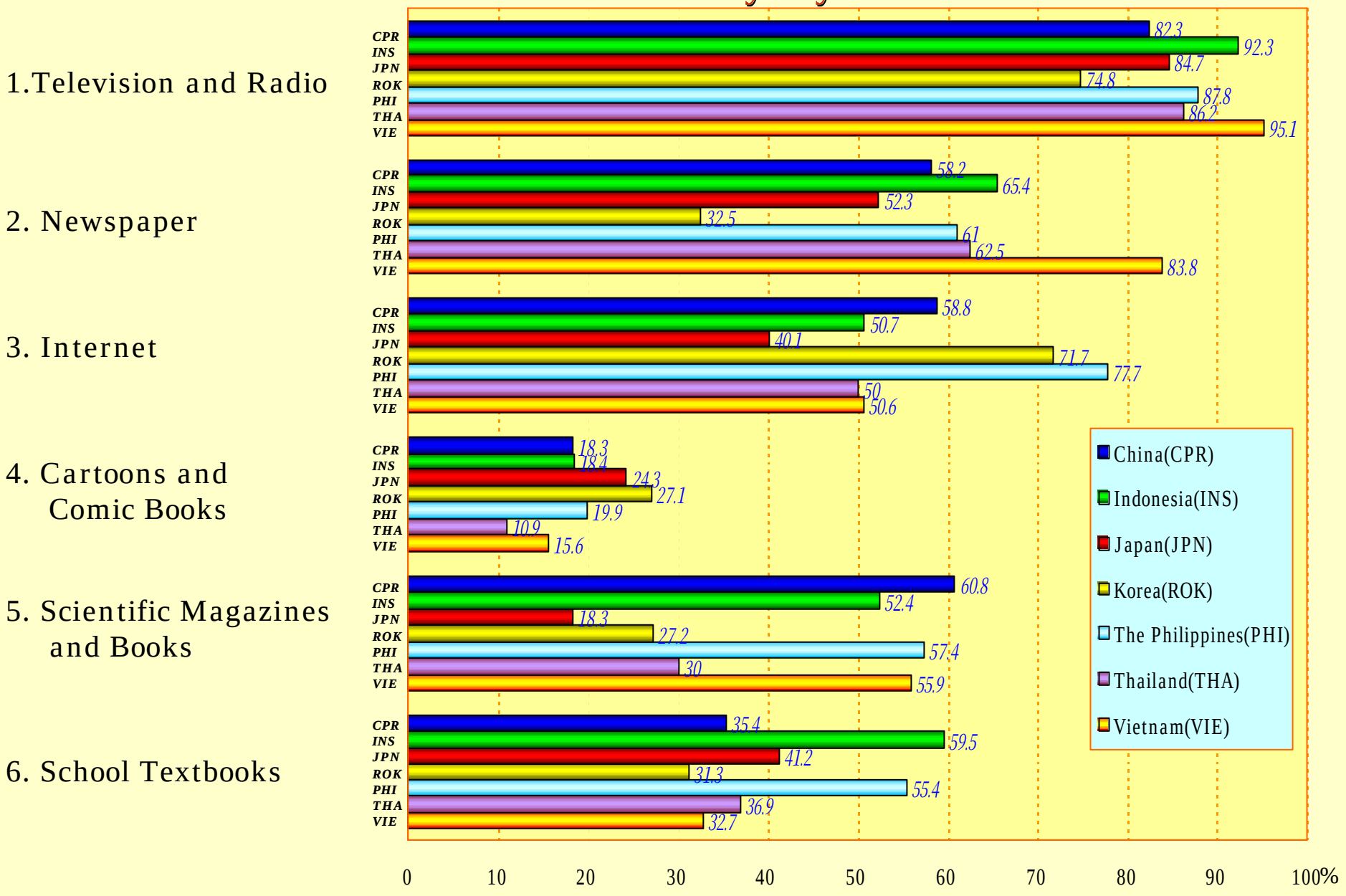
**I like them very much.**
**I like them.**

**I dislike them.**
**I strongly dislike them.**

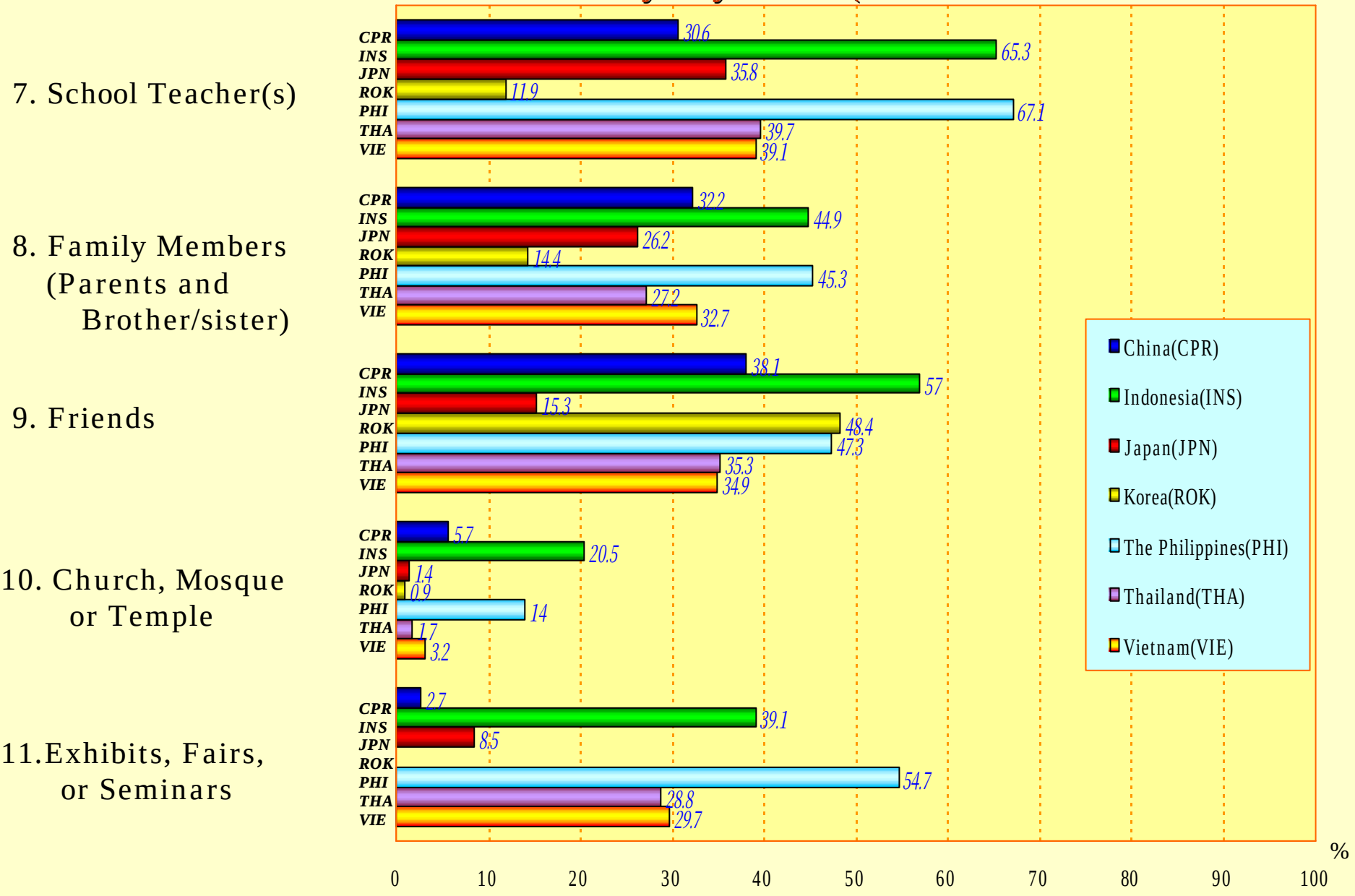
**I can not say.**



# 4-1. What are your sources of information about science and technology? Please select as many as you like.



# 4-2. What are your sources of information about science and technology? Please select as many as you like.(continued)



# 5. Following are statements about science and technology. Do you think the following information about science and technology is right or wrong? Please select one item among the three choices.

3-1. **The temperature at the center of the earth is very hot. ( R )**

3-2. **Materials that emit radiation are artificially made. ( F )**

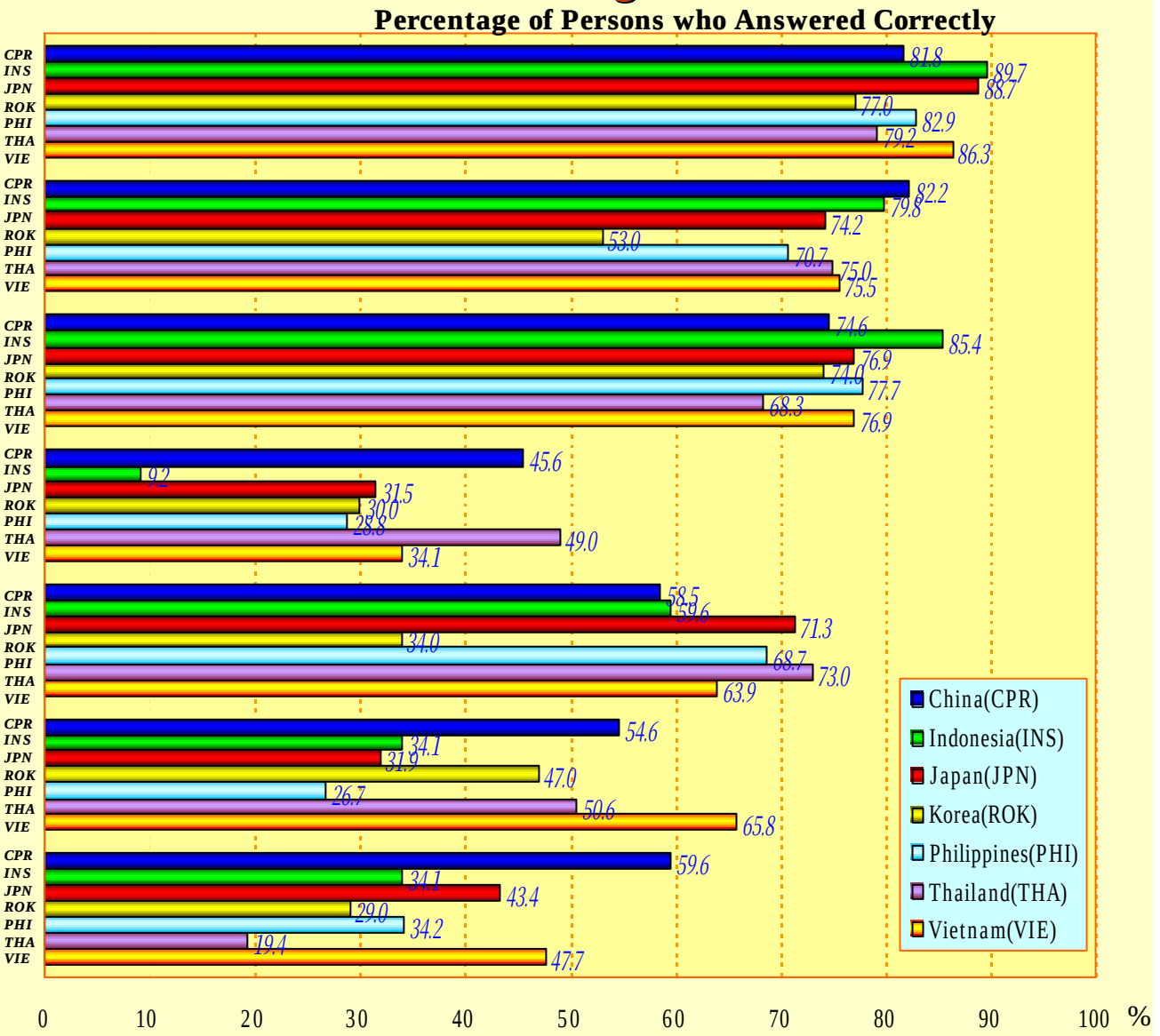
3-3. **Oxygen in the air is mainly produced by photosynthesis of green plant. ( R )**

3-4. **A laser is obtained by concentration of acoustic waves. ( F )**

3-5. **An electron is smaller than an atom. ( R )**

3-6. **The factor that determines the sex of a child is genes of a father. ( R )**

3-7. **The major reason for global warming is the release of chloroflurocarbons. ( F )**



# 6-1. Radiation is used for various applications worldwide. Please let us know your knowledge about the following applications of radiation by selecting one among the four choices. (“I know well” + “I know it to some extent”)

**9-1.Mutation breeding of rice, wheat, soybean, flower, etc.**

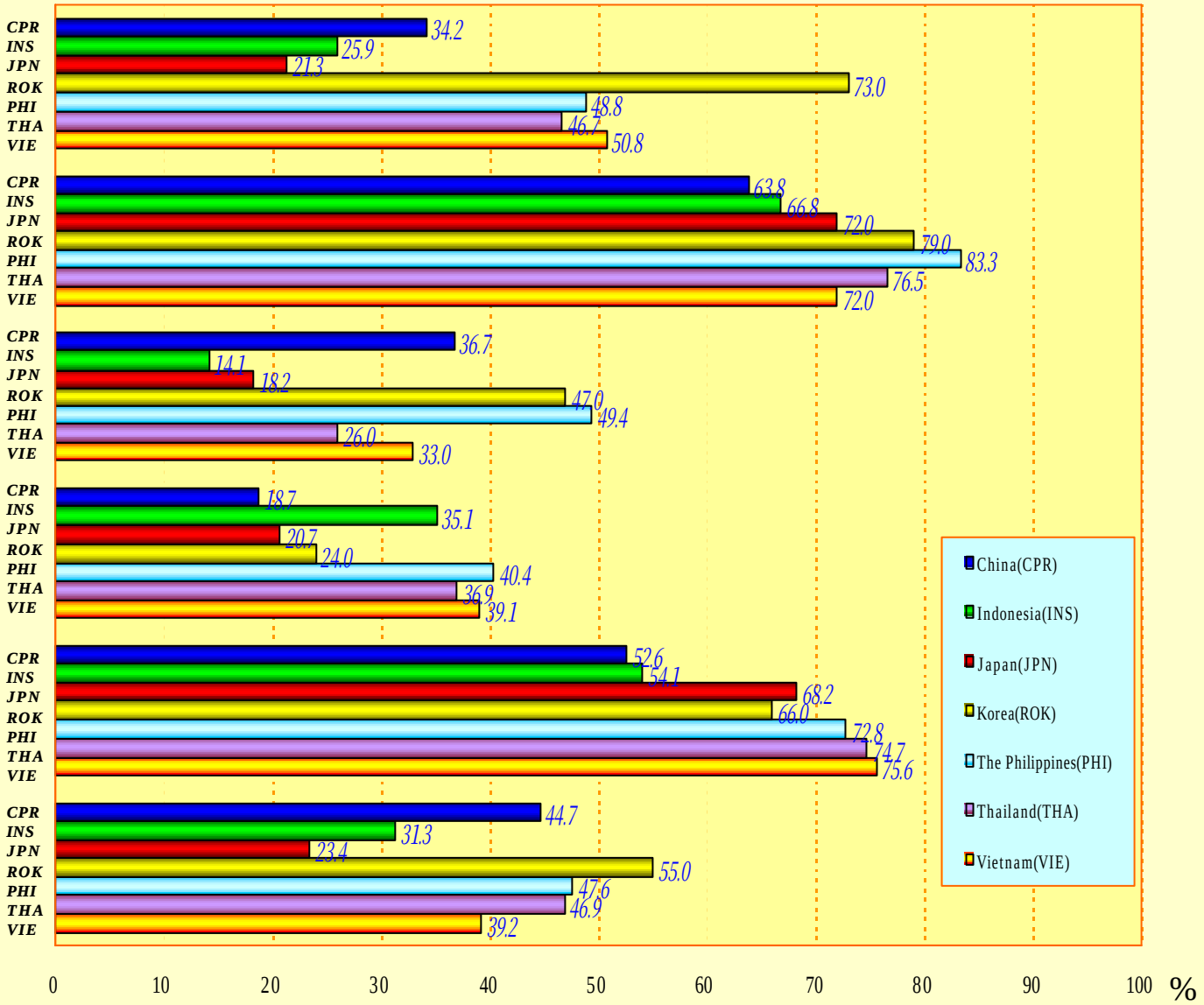
**9-2. Examination of health conditions and function of organs of human beings.**

**9-3. Decomposition and removal of air pollutants from exhaust gases of industrial plants.**

**9-4. Retardation (Delay) of sprouting of potatoes, onions, and garlic.**

**9-5. Cancer therapy.**

**9-6. Sterilization of medical supplies like syringes.**



# 6-2. Radiation is used for various applications worldwide. Please let us know your knowledge about the following applications of radiation by selecting one among the four choices. (“I know well” + “I know it to some extent”) (continued)

**9-7. Baggages inspection at airport.**

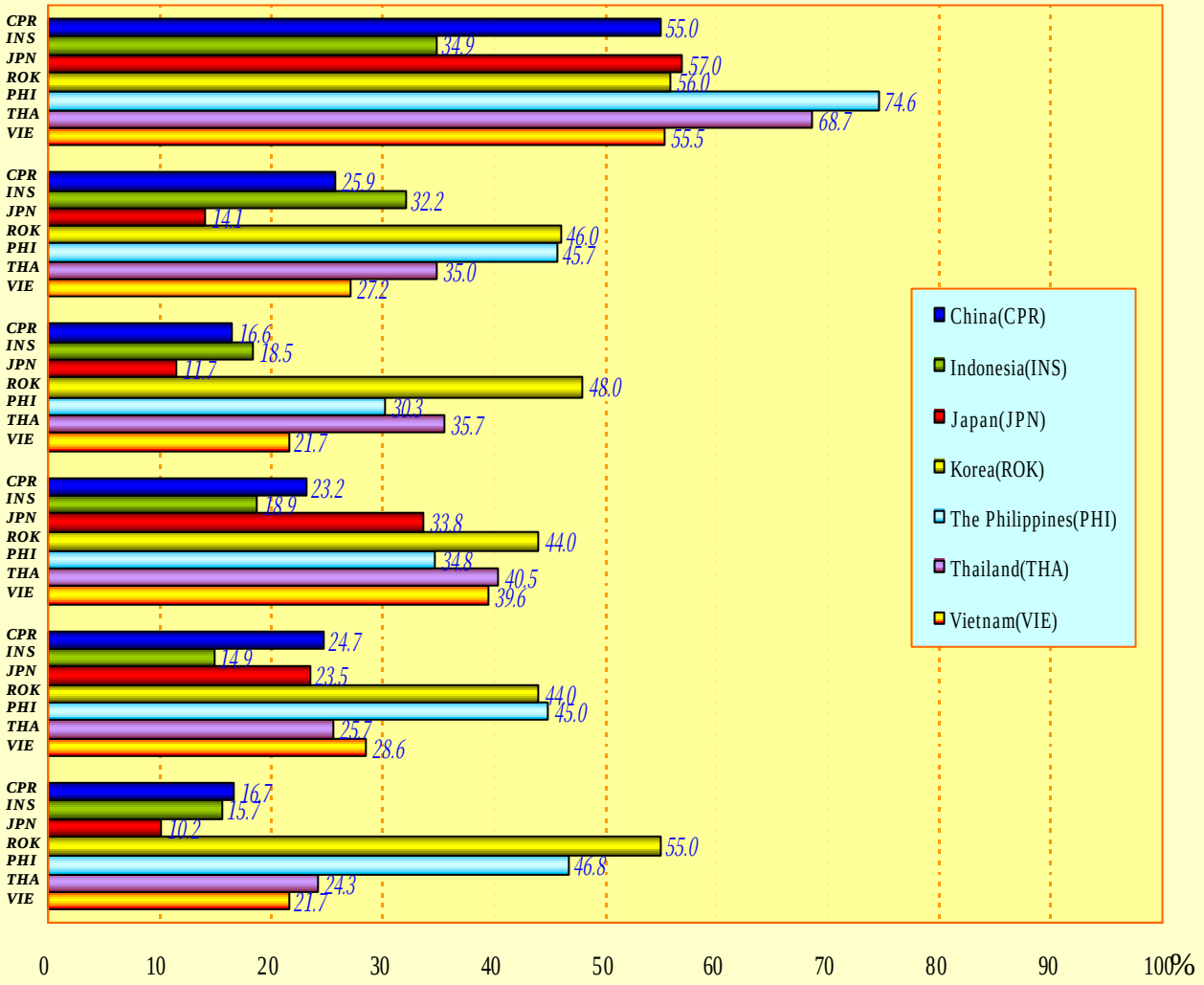
**9-8. Prevention of damage to crops and domestic animals by sterilizing harmful insects.**

**9-9. Measurement of thickness of iron plates in iron factories.**

**9-10. Non-destructive examination of statues and paintings of cultural value.**

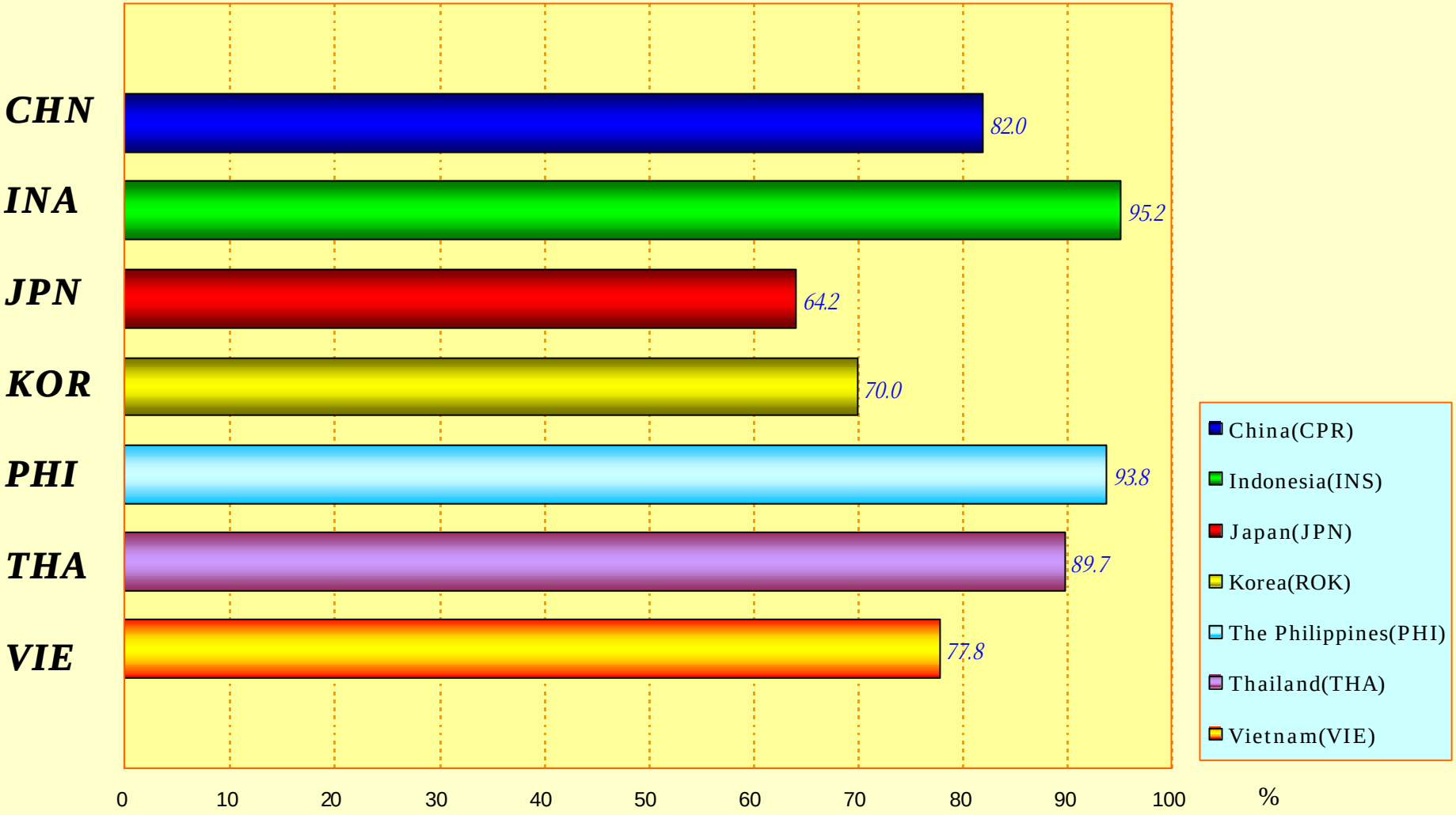
**9-11. Microanalysis of harmful pollutants in the air.**

**9-12. Production of heat-resistant insulation for electric wires.**



# 7. Are you interested in topics on radiation? Please select one among the three choices.

**Percentage of those who answered “Yes, I am very much interested” and “Yes, I am somewhat interested”.**



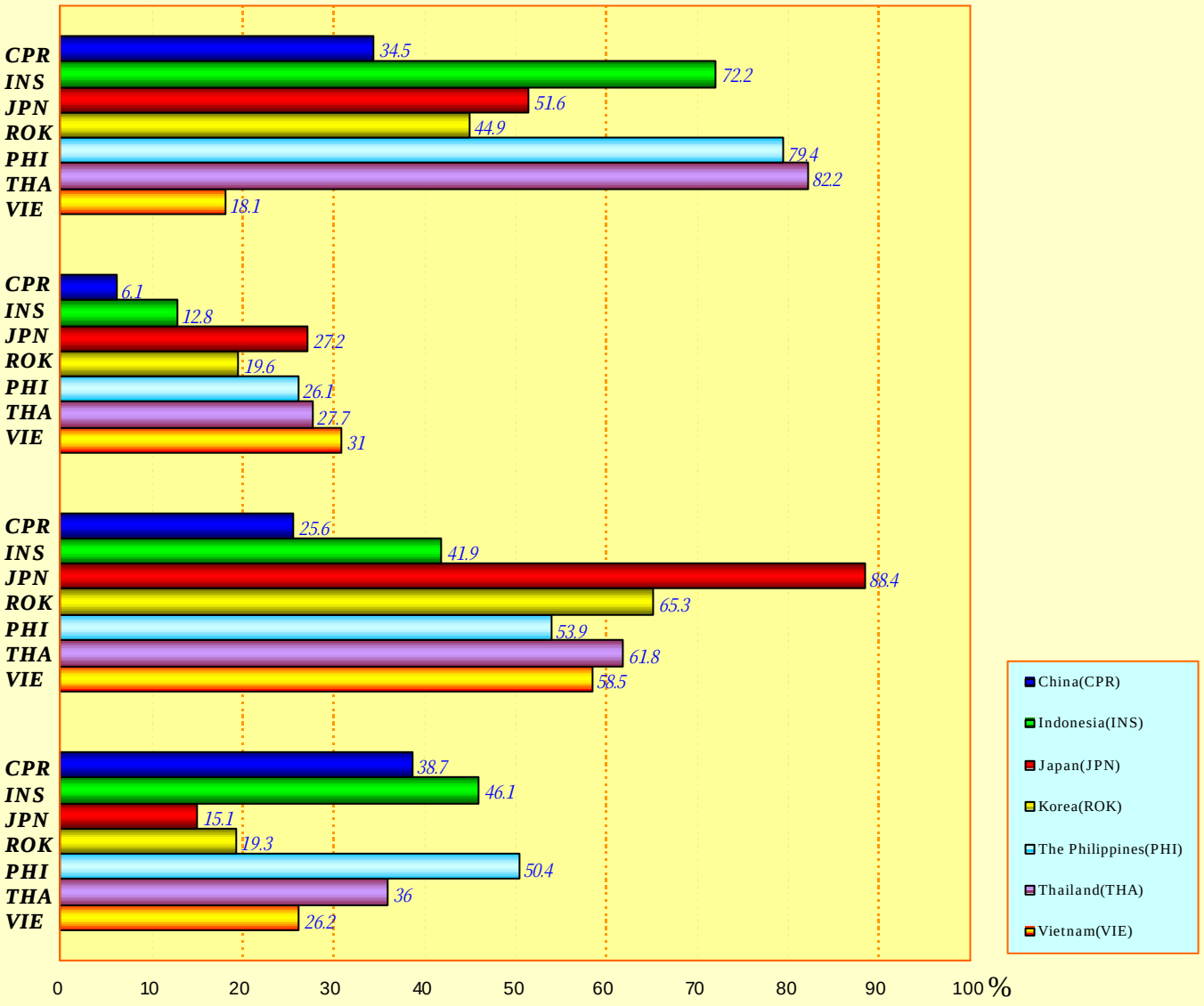
# 8. Q&A on radiation (ratio of answer “Yes”)

F4. Have you ever been taught about "radiation" or "radioactivity" in the past at school?

F5. Have you ever visited a university, a research institute, or a science and technology exhibition to learn about radiation.

F6. Have you ever had a Roentgen (X-ray) photograph taken.

F7. Is there any person who received medical care by radiation among your family members or acquaintance?



# 9. The following are some statements about “radiation”. Please select as many as you like.

**8-1. Materials that emit radiation have existed in nature since the creation of the Earth. ( R )**

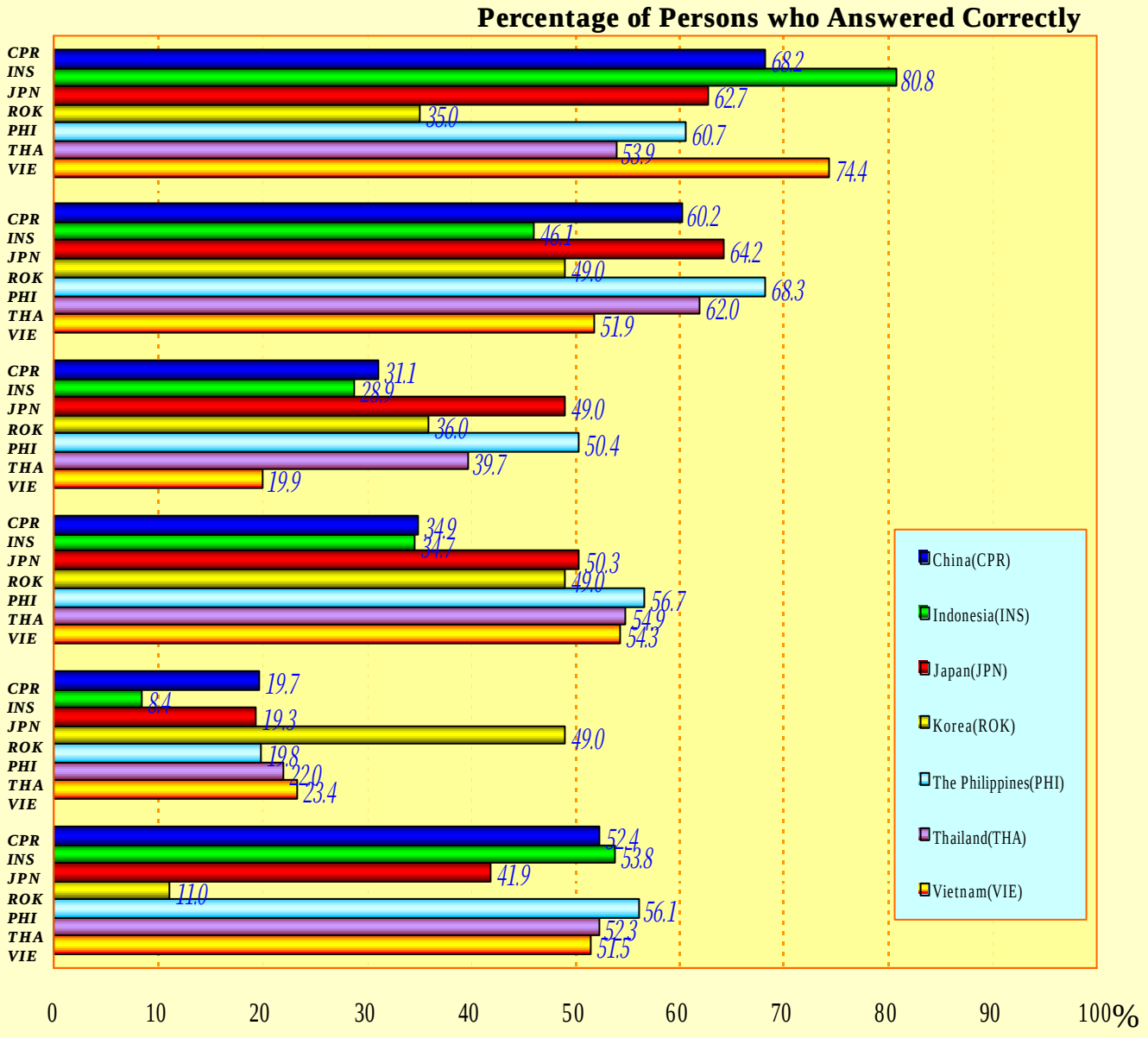
**8-2. Intensity of emitted radiation will not change as time passes. ( F )**

**8-3. Radiation is also emitted from ordinary food even it is extremely low level. ( R )**

**8-4. Direction of radiation beams can be changed by strong winds. ( F )**

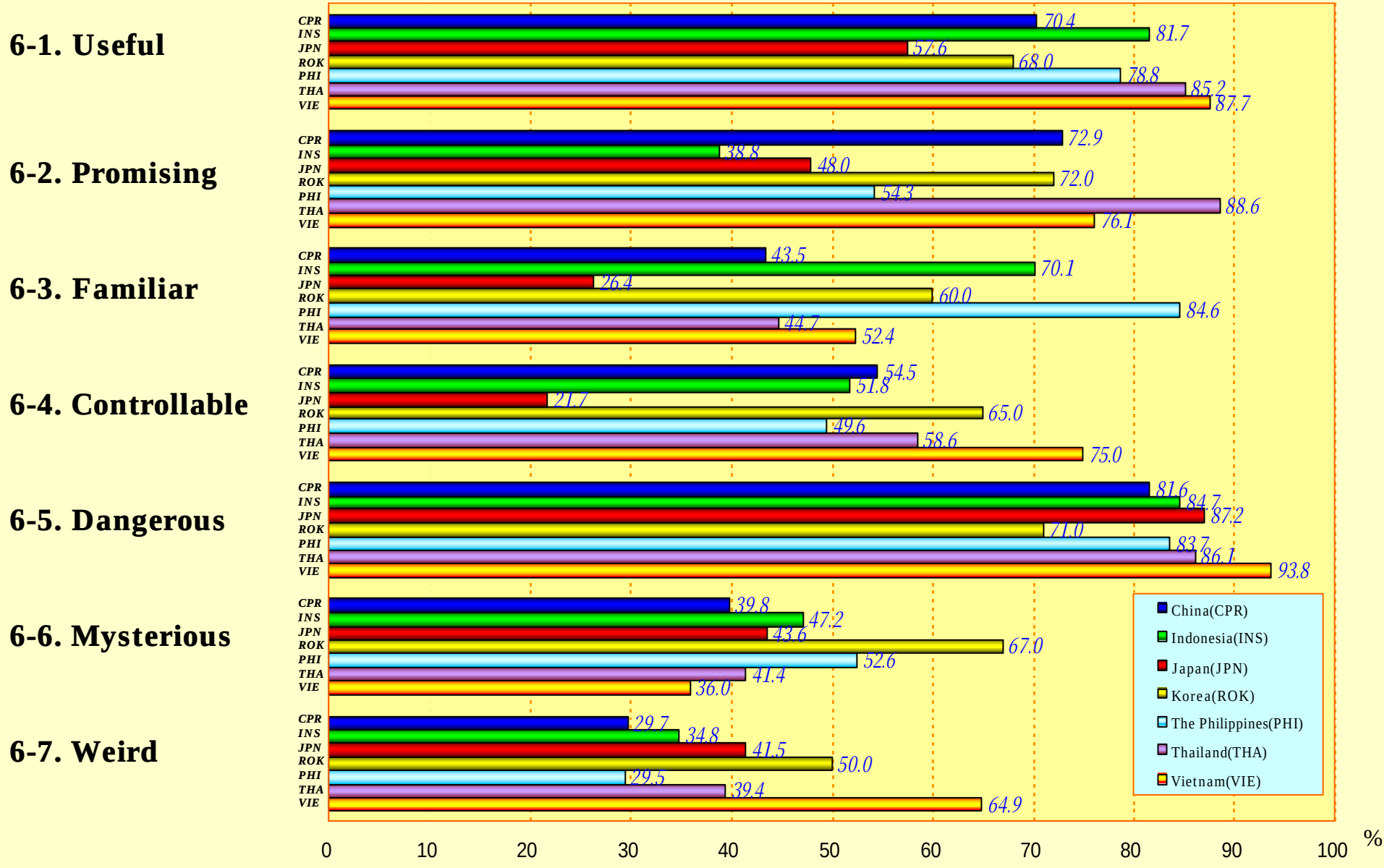
**8-5. Characteristics of natural radiation and artificial radiation are different. ( F )**

**8-6. The human body always emits radiation, but the radiation is extremely low. ( R )**

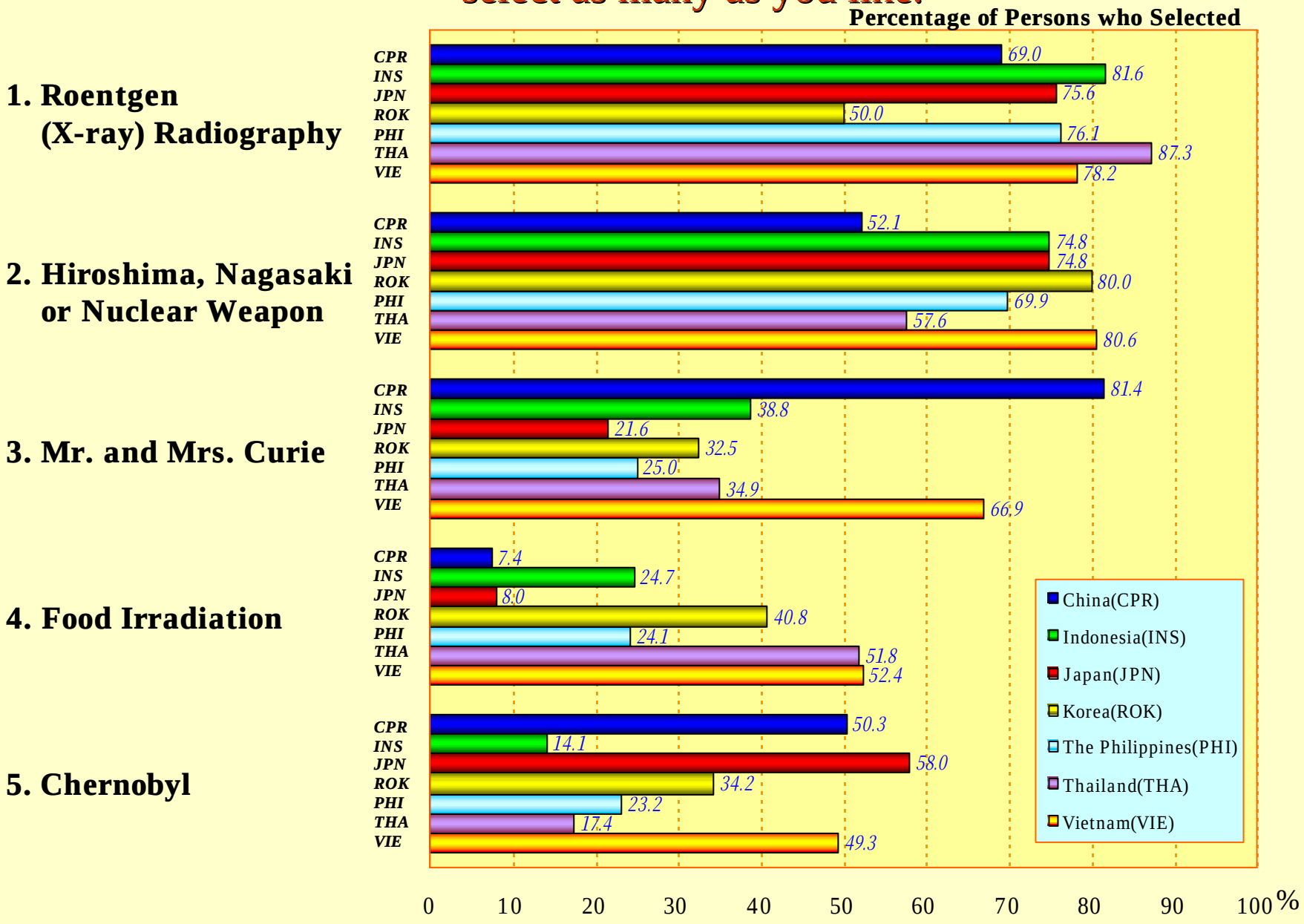


# 10. Following are statements about “radiation”. Please select one answer among the three choices.

**Percentage of Persons who Answered “ Yes I agree ” + “ I agree slightly ”**

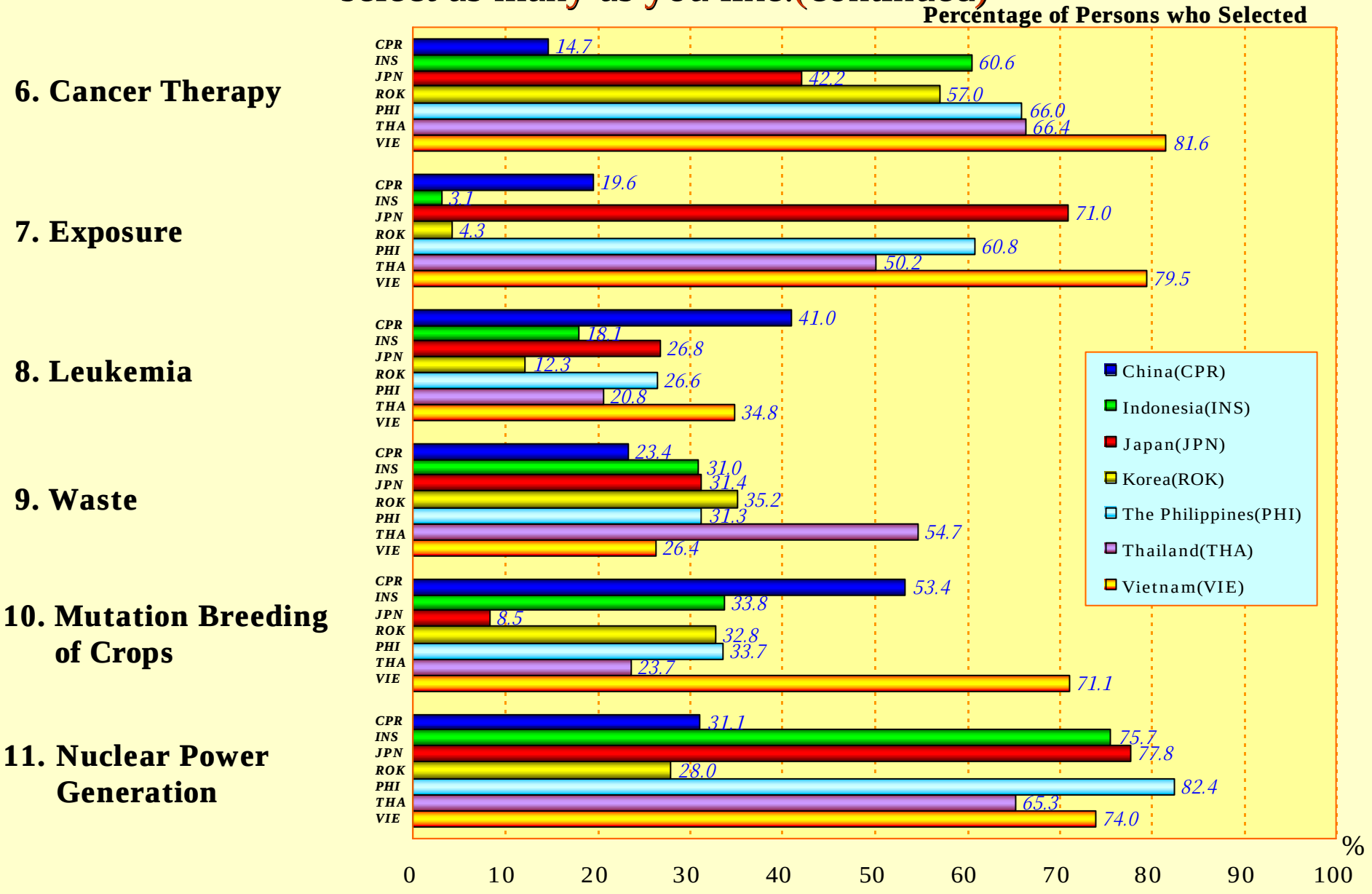


# 11-1. What do you imagine when you hear the word “radiation”? Please select as many as you like.



# 11-2. What do you imagine when you hear the word “radiation”? Please select as many as you like.(continued)

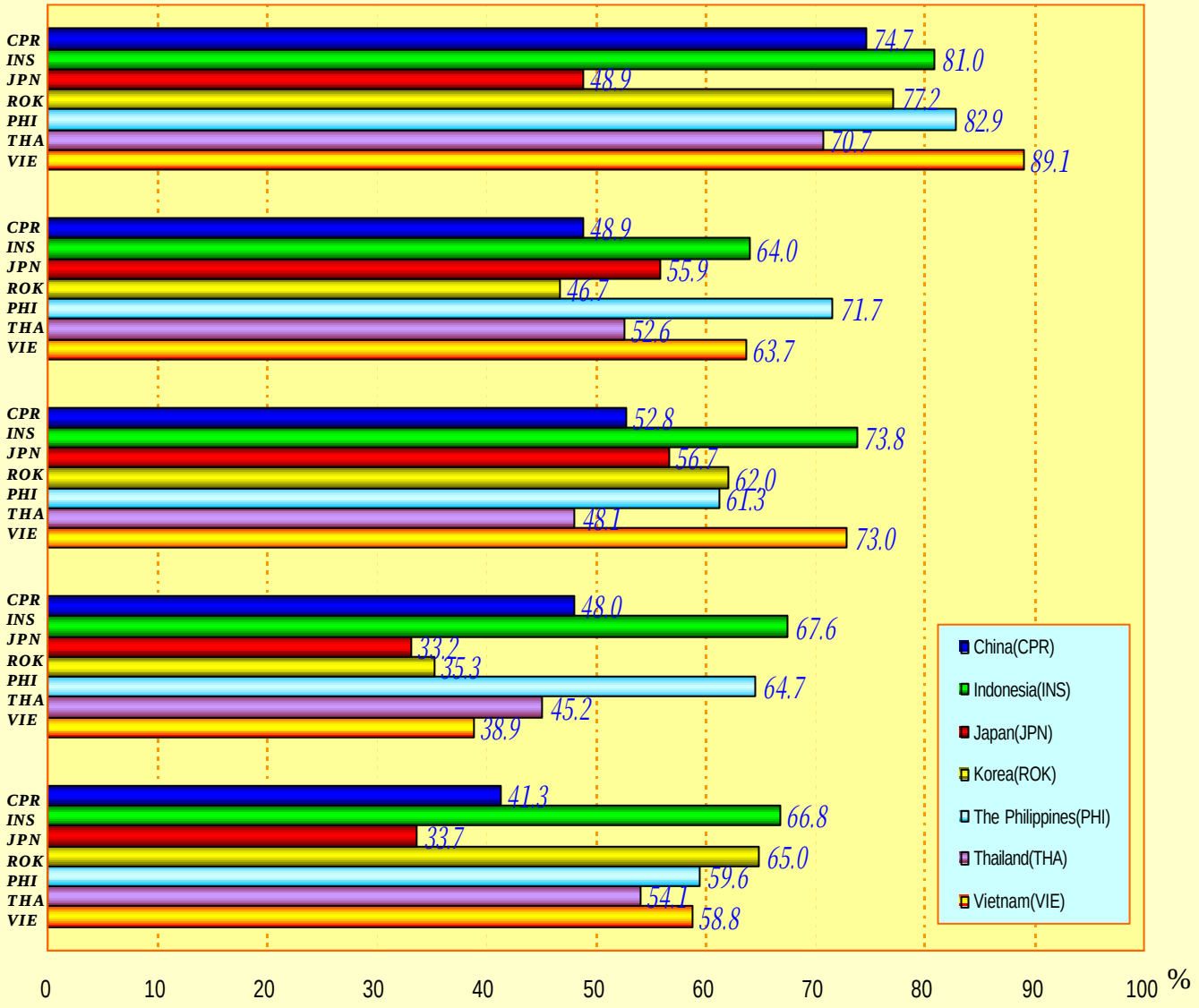




# 12-1. What do you want to know about “radiation”?



1. **Amount of radiation exposure that may affect health of human beings**
2. **Safety measures in managing radiation exposure**
3. **Emergency preparedness for radiation-related accidents**
4. **Facilities that are using radiation**
5. **Application in food**



# 12-2. What do you want to know about “radiation”?