

長庚大學期中、期末考試答案用紙

科目 \_\_\_\_\_

學年度 第 學期 考 系 姓名 林宜大

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$$1. K=10 \quad G=70 \quad B=20 \quad \#1024.$$

$$(1) \cdot X=0 \quad f(x)=(1,0,0)+(0,1,0)+(0,0,1)+(0,1,1)+(0,0,2)+(0,1,2)+(0,0,3)+(0,1,3)+(0,0,4)+(0,1,4)+(0,0,5)+(0,1,5)+(0,0,6)+(0,1,6)+(0,0,7)+(0,1,7)+(0,0,8)+(0,1,8)+(0,0,9)+(0,1,9)=1024$$

$$X=1 \quad f(x)=(1,0,0)+(1,1,0)+(1,0,1)+(1,1,1)+(1,0,2)+(1,1,2)+(1,0,3)+(1,1,3)+(1,0,4)+(1,1,4)+(1,0,5)+(1,1,5)+(1,0,6)+(1,1,6)+(1,0,7)+(1,1,7)+(1,0,8)+(1,1,8)+(1,0,9)+(1,1,9)=512$$

$$X=2 \quad f(x)=(2,0,0)+(2,1,0)+(2,0,1)+(2,1,1)+(2,0,2)+(2,1,2)+(2,0,3)+(2,1,3)+(2,0,4)+(2,1,4)+(2,0,5)+(2,1,5)+(2,0,6)+(2,1,6)+(2,0,7)+(2,1,7)+(2,0,8)+(2,1,8)+(2,0,9)+(2,1,9)=1152$$

$$X=3 \quad f(x)=(3,0,0)+(3,1,0)+(3,0,1)+(3,1,1)+(3,0,2)+(3,1,2)+(3,0,3)+(3,1,3)+(3,0,4)+(3,1,4)+(3,0,5)+(3,1,5)+(3,0,6)+(3,1,6)+(3,0,7)+(3,1,7)+(3,0,8)+(3,1,8)+(3,0,9)+(3,1,9)=15360$$

$$X=4 \quad f(x)=(4,0,0)+(4,1,0)+(4,0,1)+(4,1,1)+(4,0,2)+(4,1,2)+(4,0,3)+(4,1,3)+(4,0,4)+(4,1,4)+(4,0,5)+(4,1,5)+(4,0,6)+(4,1,6)+(4,0,7)+(4,1,7)+(4,0,8)+(4,1,8)+(4,0,9)+(4,1,9)=13440$$

$$X=5 \quad f(x)=(5,0,0)+(5,1,0)+(5,0,1)+(5,1,1)+(5,0,2)+(5,1,2)+(5,0,3)+(5,1,3)+(5,0,4)+(5,1,4)+(5,0,5)+(5,1,5)+(5,0,6)+(5,1,6)+(5,0,7)+(5,1,7)+(5,0,8)+(5,1,8)+(5,0,9)+(5,1,9)=252+252+1260+1260+2520=12520$$

$$X=6 \quad f(x)=\frac{10!}{6!4!}+\frac{10!}{6!4!}+\frac{10!}{6!3!2!}+\frac{10!}{6!1!3!}=210+210+840+840+1260=3360$$

$$X=7 \quad f(x)=\frac{10!}{7!3!}+\frac{10!}{7!3!}+\frac{10!}{7!2!2!}+\frac{10!}{7!1!2!}=120+120+180+180=600$$

$$X=8 \quad f(x)=\frac{10!}{8!2!}+\frac{10!}{8!2!}+\frac{10!}{8!1!1!}=45+45+90=180$$

$$X=9 \quad f(x)=\frac{10!}{9!1!}+\frac{10!}{9!1!}=20$$

$$X=10 \quad f(x)=\frac{10!}{10!}=1$$

$$(2) E(X)=5120+2 \times 11520+3 \times 15360+4 \times 13440+5 \times 8400+6 \times 3360+7 \times 600+8 \times 180+9 \times 20+10 \times 1 = 194010$$

$$(3) S^2 = E(X^2) - UX^2$$

$$= 5120+4 \times 11520+9 \times 15360+16 \times 13440+25 \times 8400+36 \times 3360+49 \times 600+64 \times 180+81 \times 20+100 \times 1 - UX^2 = (768160-194010) / (10!)^2 = 574170 / (10!)^2$$

$$(4) Y=0 \quad f(Y)=$$

$$Y=1 \quad f(Y)=$$

$$Y=2 \quad f(Y)=$$

$$Y=3 \quad f(Y)=$$

$$Y=4 \quad f(Y)=$$

$$Y=5 \quad f(Y)=$$

$$Y=6 \quad f(Y)=$$

$$Y=7 \quad f(Y)=$$

$$Y=8 \quad f(Y)=$$

$$Y=9 \quad f(Y)=$$

$$Y=10 \quad f(Y)=$$

(請翻面繼續作答)